

MOTOR AGE

Vol. VIII. No. 5

CHICAGO, AUGUST 3, 1905

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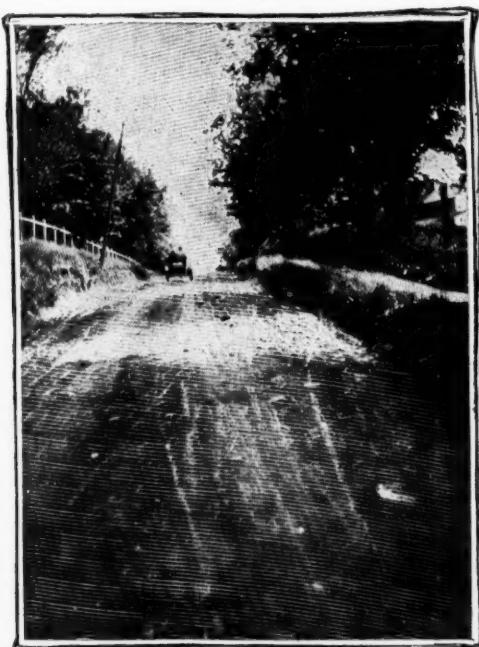
MOTORAGE

VOL. VIII. NO. 5

CHICAGO, AUGUST 3, 1905

\$2.00 Per Year

AMONG ST. LOUIS HILLS AND DALES



HILL ON NORTH AND SOUTH ROAD

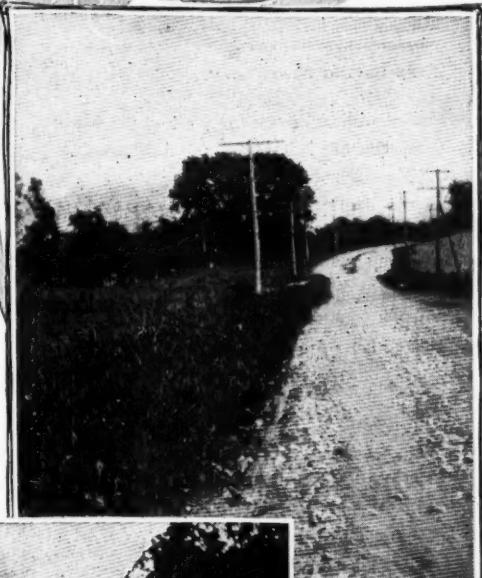
In St. Louis county on any one of these fair afternoons of early summer a motor car, closely followed by a cloud of dust in size proportionate to that of the car, is the ordinary rather than the unusual sight, for the county roads, while not remarkable for their smoothness, are nevertheless good roads, which every enthusiastic motorist of St. Louis enjoys. The hilltop air, perfumed from green wheat fields and sweet clover pastures, is compensation in full to the occupants of the big car and to the little fellow's passengers alike for the dust storms they encounter in passing and in being passed on the road.

They forget the dust behind them as the fresh air ahead is pumped into their lungs with each stroke of the engines, and an occasional thank-y'-marm is scarcely noticed as the cars plunge with happy abandon into the symphony of green and white and blue.

The most important highway of St. Louis county is what is known as the Manchester road, a continuation of Manchester avenue. It extends from Kings highway within the city limits to the county line near the Missouri river, a distance of about 35 miles. It is

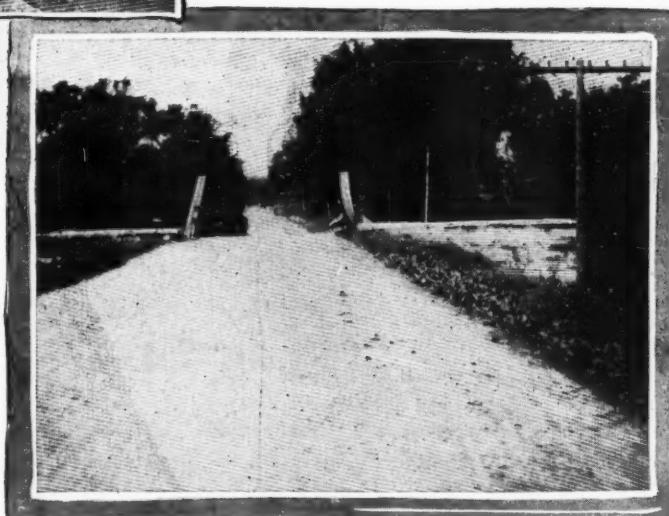


FLORRISSANT
PLANK ROAD



LONG GRADE, NATURAL BRIDGE ROAD

also one of the safest highways because of the general absence of hidden culverts, road embankments and railroad crossings, there being only one of the latter, and that a single track branch line, which crosses the road at Mentor. The macadam construction is kept in good repair by

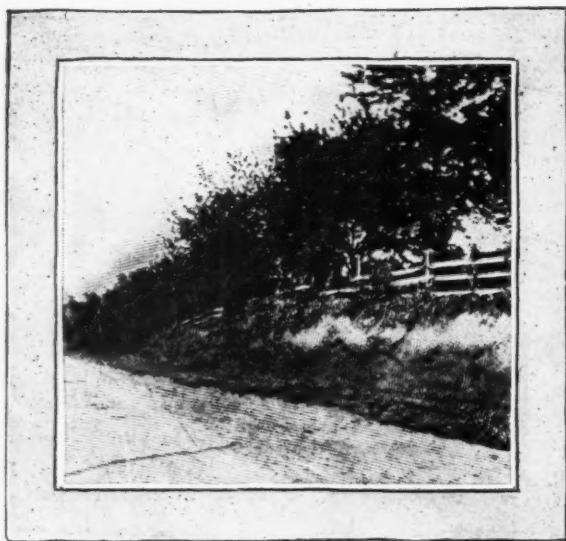


MANCHESTER ROAD. LOOKING WEST

a rather heroic measure, that of dumping wagonloads of sharp-edged rocks into any place where a hole appears or where the road shows wear. There is, however, scarcely any attempt made to repair the road in any manner on the first few miles, where the Suburban trolley line follows it, and where there is a great deal of heavy hauling.

A popular run is to Pond, 24½ miles out. The uneven stretch just mentioned is avoided by driving through Forest park and the world's fair grounds to the Clayton road. The road through the fair grounds begins near the site of the former Inside inn and extends through the colonnade of states to the southwestern corner of the grounds. The Clayton road is followed from here for about 1½ miles to its junction with the North and South road by the links of the beautiful Country Club. Here a turn to the right is made, the left being the road to Clayton.

The North and South has a gravel bed at



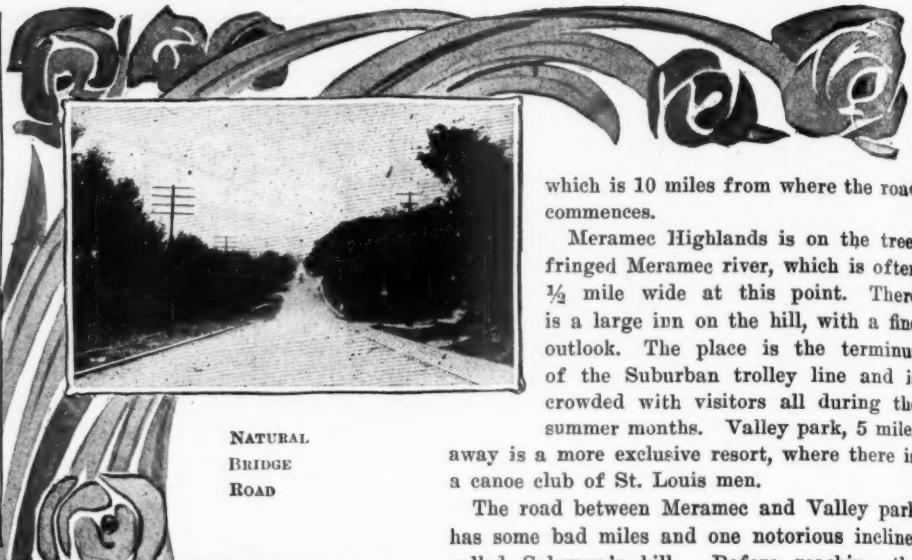
MACCAUSLAND DIRT ROAD

this point, which is a relief after the hills and macadam of the Clayton road; but ere 2 miles have been covered a hill appears mountainous ahead, where the roadbed is none too good and which calls for the low gear before the top is reached. After this the gravel road continues to the Manchester in a very creditable fashion. It extends a few miles further to a dangerous grade crossing at Brentwood, where several persons have lost their lives. Then the road becomes Shady avenue and continues into Webster.

The point where the North and South intersects the Manchester is but 5 miles from Kings highway, but as the motorist points the nose of his car westward he feels intuitively the freedom of the countryside and a thick cloud of dust tells no man's license number. Probably when there is state motor registration in Missouri, instead of city and innumerable county licenses, motorists will be required to place their numbers in front. Then, perhaps, the spirit of freedom will not be as moving. But now, with the grade-crossing at Mentor 7 miles out, behind, the ordinary car will gorge mile after mile of the broad white road, bolting down hill and rushing up, for otherwise taken the hills usually demand the frequent use of the low.

Twelve miles from where the road commences Deperes is passed, but not before reaching the Rock Hill road, a dirt crossroad to Webster, which is one of the thickly populated suburbs. Manchester is passed at 17 miles and Baldwin 18½ miles out. About 2 miles east of Baldwin the road is built on embankment in some instances, and there are culverts secreted by underbrush in apt places for reckless drivers. Ellisville is the 20-mile point, ¼ mile beyond which is the old state road, called the Eatherton, which is said to lead to Orrville; but its frequently promising aspect at this junction is deceptive, for it runs through the marshy river bottoms of the Missouri.

Pond is but 1½ miles beyond Grover, and a mile further west is the Glencoe lime kiln village. These three towns formed what is known as the Citizens' Protective Association 6 years ago to protect its members from horse thieves and similar marauders, but the scarcity of horse thieves made the association practically defunct. The invasion of the motor car, or, as they style it, the degradations of St. Louis automobiles, soon brought about a meeting at the Pond



NATURAL BRIDGE ROAD

which is 10 miles from where the road commences.

Meramec Highlands is on the tree-fringed Meramec river, which is often ½ mile wide at this point. There is a large inn on the hill, with a fine outlook. The place is the terminus of the Suburban trolley line and is crowded with visitors all during the summer months. Valley park, 5 miles away is a more exclusive resort, where there is a canoe club of St. Louis men.

The road between Meramec and Valley park has some bad miles and one notorious incline, called Solomon's hill. Before reaching the summit one finds a short level, where he is apt to throw in the high speed only to realize the next moment that there is practically another and steeper hill yet to be climbed. Near Barrets, just west of Meramec, one may swing to the left on the macadam road and connect with the Manchester road, 2 miles north.

The Clayton road begins at Kings highway, a few city blocks from the Manchester, and forms the western boundary of Forest park and the world's fair grounds for more than 2 miles. Beyond the North and South road it extends to Price, 6 miles, and to Dyer, 8½ miles from Kings highway. The macadam continues for several miles more, after which the Clayton becomes the Smith road, which is not good. Clayton road has been known since the old bicycle days for its hills, which are absolutely continuous, for there are scarcely 100 feet of continuous level bed in the entire road.

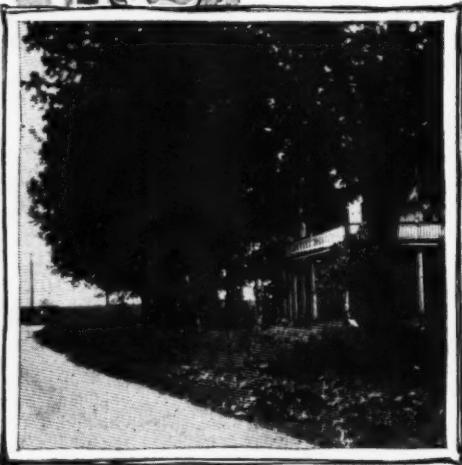
By turning north on the North and South and driving for ½ mile one arrives at Clayton itself. Here in the center of the town one will find the justice factory for the whole county, for this is the county seat. Passing through Clayton and down a steep hill the North and South road continues for a little over a mile, ending at the Olive street road, just beyond the village of Mount Olive.

The Olive street road is a continuation of Delmar avenue and begins at the city limits. It is of the usual macadam construction, with here and there some gravel. As far as Bellefontaine, 16 miles out, it is known as the Olive street road and beyond that point as the Central Plank road. There are four grade crossings along the route, where caution is necessary.

The run to Creve Coeur lake is a pretty 13-mile spin, which is accomplished by turning north on the second dirt road west of the little town called Chapman. It is not difficult

to mistake the road in taking the first turn which leads to the lake itself by a very circuitous and very rough route. A mile beyond the turning point to Creve Coeur is Lake, where the Hog Hollow road joins the Olive street road. This Hog Hollow road is sometimes in good condition—but never within 2 weeks after a rain—and makes a very interesting wilderness drive to the lakes. The Central Plank road beyond Bellefontaine goes to Bonhomme, 10 miles farther out.

The numerous dirt roads which intersect the Olive street road are well enough for experiments or adventures, when



LIFE SAVING STATION, ST. CHARLES ROAD

general merchandise store and sixty-five farmers paid the \$1 initiation fee to become members. The association constitutes a sort of vigilance committee with the three village constables, and it is woe to the motorists who exceed the speed limits within the precincts of these three towns.

A very hilly dirt road, called MacCausland avenue, connects the southwestern corner of Forest park with the Manchester road at Ellendale; but this is the shortest connection with the Big Bend road to Meramec Highlands and Valley park. The MacCausland road is about 1½ miles in length, and when one reaches the Manchester he has yet to drive over a mile of the worst part of that road to where the Big bend begins on the lefthand side. From this point the distance to Old Orchard, one of the important suburban towns, is little more than a mile. The road is excellent, though hilly, where it forms the southern boundary of Webster, a mile further on, past where it is a good road all the way to Meramec Highlands,



NATURAL BRIDGE ROAD

rain has not fallen for some weeks, but other times are absolutely impossible.

The roads mentioned so far are in what might be called the central section, and are all connected fairly well within several miles of the city limits by cross-roads. We now come to consider the southern section of roads that includes as most important the Gravois and the De Soto pike, the latter sometimes known as the Lemoy rock road. There is no such thing as a long level stretch of St. Louis county road, but perhaps these roads have more than their share of grades. At any rate they are not as popular with St. Louis motorists as are the other rock roads of the county.

The Gravois road is a continuation of Gravois avenue, but is best approached by the Morgansford road, which runs for 2 miles from the south central gate of Tower Grove park until it connects with the Gravois road. The Gravois begins at this point and extends for a distance of a little over 10 miles to Fenton, on the Meramec river. Beyond Fenton the road continues for many miles into Jefferson county. It is very much used by the slow-moving farmer's wagon in bringing produce to the market.

The De Soto pike boasts the longest and most radiator-trying hills in the state, so that it is deservedly boycotted by the car of ordinary power. One section of the road is composed of two hills that form an acute angle, each leg of which is at least a mile in length. The beginning of the road is most easily reached by following South Broadway to its end and then turning west for a few blocks to where the road begins near Luxemburg at the city line. From there it runs through Carondelet township to the Meramec river, 10 miles away, and then passes out of the county.

In the northern section are the St. Charles rock road, the Natural Bridge road, the Florissant plank road and the Halls Ferry, Bellefontaine and Columbia bottom roads.

The St. Charles rock road is the highway to St. Charles, as its name indicates, and terminates at the passenger bridge across the Missouri river, where opposite lies St. Charles. The road is a continuation of Easton avenue from Wellston at the city limits, from which point it is almost a beeline to the bridge, 15 miles away. Excepting the first few miles, where there is much traffic and where the St. Charles trolley line occupies the center of the road with double tracks, the road is very picturesque and pretty. Extensive country homes can be seen as one goes westward, and at about 4 miles out the Normandie Park Golf Club is passed. The trolley line runs on its own right of way on each side of the road as far as Pattonville, 8 miles out. Two miles from Pattonville the highway is joined by the Natural Bridge road. This point of junction is about 3 miles from the St. Charles court house.

Less than a mile out on the St. Charles road the Hunt road branches off to the north. This is a splendid road until after it passes the Glen Echo Country Club on the left and intersects the Natural Bridge road. After this point it is an ordinary dirt road to where it meets the Jennings road, which intersects the Hall's Ferry road, $\frac{1}{2}$ mile farther north.

The Natural Bridge road commences at Grand avenue, bounding the old fair grounds on the south, from where it is $3\frac{1}{4}$ miles to the city limits. At Normandy it crosses a branch line of the Wabash, which is the only railroad



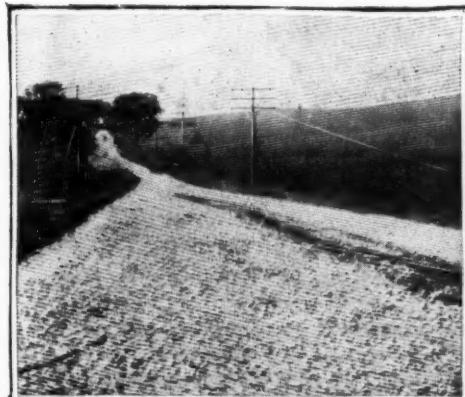
OLIVE STREET ROAD

crossing. It runs through Bridgeton, 8 miles out of town, and $8\frac{1}{2}$ miles farther on meets the St. Charles road at a very pretty spot, where there is a comfortable, old-fashioned hostelry, with broad veranda, where one may sit in the shade of the big trees that surround the house.

A short distance beyond where the Hunt road meets the Natural Bridge road the Florissant plank road commences. This is a short road but one of the very prettiest and levelest in all the county. All the way to Ferguson, 3 miles, and to Florissant, 7 miles, the road is shaded by tall elms and maples thick with foliage.

The Florissant is connected with the Hall's Ferry and Bellefontaine roads by the Chambers road, a dirt road that is now being made a rock road. It begins at Ferguson and runs 3 miles to the Hall's Ferry road, beyond which its name is changed to Bissell and Walker road. The Bellefontaine road is met 2 miles farther on. It is said that there are twenty-one formidable hills on this 5 miles of road.

The Bellefontaine road, which is a continuation of North Broadway, commences at the



north gate of Bellefontaine cemetery. This road is much used by members of the Field Club, to which is a short run of 3 miles. Beyond the Field Club the road continues several miles. It is one of the few level roads of the county.

One mile out, at Baden, the Columbia Bottom road branches off the east from the Bellefontaine until it reaches the very bank of the Mississippi, which it follows for 3 miles to

Chain of Rocks, which supplies the city water and is within the city limits. The enormous engines and powerful pumps at this station are well worth seeing and the Columbia Bottom road is a splendid straightaway to it.

St. Louisans generally confine themselves to the limits of the county line, because the good roads extend beyond those limits only in the south, where the hills are long and numerous, in a great many instances uneasy climbs for the moderate-powered car.

An organized tour, or even a day's run of the automobile club, is still unknown in St. Louis, on account of the lack of roads; but the motorists who choose the season when the roads are in their best condition will find much of interest in the outlying country-side, where the inhabitants are perfectly unfamiliar with motor cars, and where many of the people have never seen a trolley-car.

If one pushes through St. Charles county over dirt roads and through fords, along the Quiver river bottom of Lincoln county, and into Pike, there he will find the justly celebrated pikes of Pike county. A great many of the touring enthusiasts have gone into Pike county by taking their cars to Hannibal, Mo., on a Mississippi river steamboat.

Another set-back to touring out of St. Louis, is the decision of the Missouri court to the effect that a license is necessary in every county of the state. These licenses cost from \$2 to \$2.50 and are only good for a year. St. Louis motorists have a \$10 yearly contribution to make for the privilege of driving in the city. As soon as one passes out of the city limits, he comes into St. Louis county, which is separate and distinct from St. Louis itself, which is not in any county at all. The St. Louis Automobile Club aims to fight these measures and bring about reform, but as yet has accomplished little.

The attitude of the farmers, or the people of the country, in St. Louis county, except in the neighborhood of Ponds, is becoming less unfriendly each year. In many instances they respect the motor car where they used to despise it. The MOTOR AGE man knows of one particular man on the Olive street road who a year ago refused water to a motorist, who now welcomes all with a smile and a cheery note. The horses are getting used to the cars and the farmers recognize in the motor-driven vehicle qualities they greatly admire.



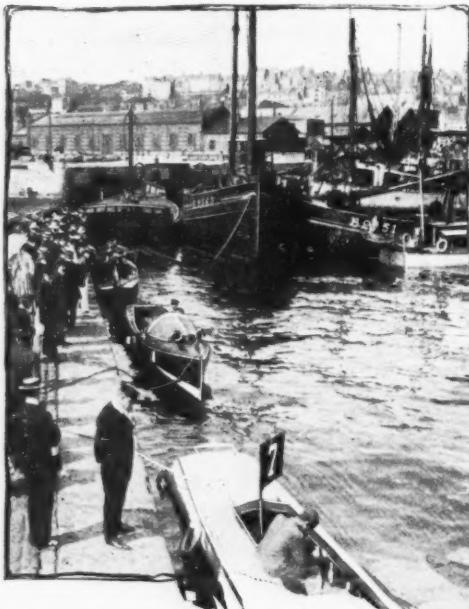
GRADE CROSSING, NORTH AND SOUTH ROAD

ERROR COSTS EDGE CROSS CHANNEL RACE



Paris, July 18—Although beaten by Napier II in time, La Rapiere, on a technicality, has been declared the winner of the second annual and international cross channel motor boat race, a distance of 58.41 miles, run under the auspices of the Automobile Club of France Saturday. Instead of going from Calais to Dover as they did last year, the contesting boats followed a course from Boulogne, round a mark boat moored off Folkestone, and back again to Boulogne. Napier II, owned by S. F. Edge and one of the English representatives, flashed across the same line she started from in 2 hours 24 minutes 47 seconds. La Rapiere hove in sight 2 minutes later, while the Edge boat circled around outside a mile. Instead of crossing the starting line, the French craft shot across the imaginary line at the entrance to the harbor in just 2 hours 25 minutes 50 seconds.

PREPARING FOR THE START



S. F. EDGE'S NAPIER II

Even while the Englishmen were congratulating each other on the supposed victory of Napier II, the Frenchmen were gleefully gloating over the technicality which gave them the honor. The English boat was charged with a breach of regulations in finishing at the starting point instead of the mouth of the harbor, where La Rapiere did. It will be remembered that last year in the race for the Harmsworth cup Napier II won the trophy only to be disqualified by the international commission on the protest raised on behalf of the French boat, Trefle-a-Quatre, on the technicality that the Napier II was ineligible because it had won a race previous to striving for the Harmsworth trophy. Naturally it would have been supposed that Edge would have been more careful this time after this experience.

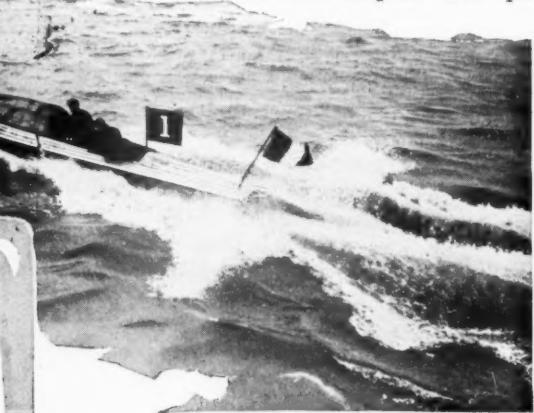
Of the twenty starters in the cross channel race this year only seven made the round trip under their own power, mechanical defects, unseaworthy hulls or machinery poorly protected from the water putting thirteen out of commission. It had been expected that the Dubonnet would be a formidable competitor, as she

midable competitor, as she

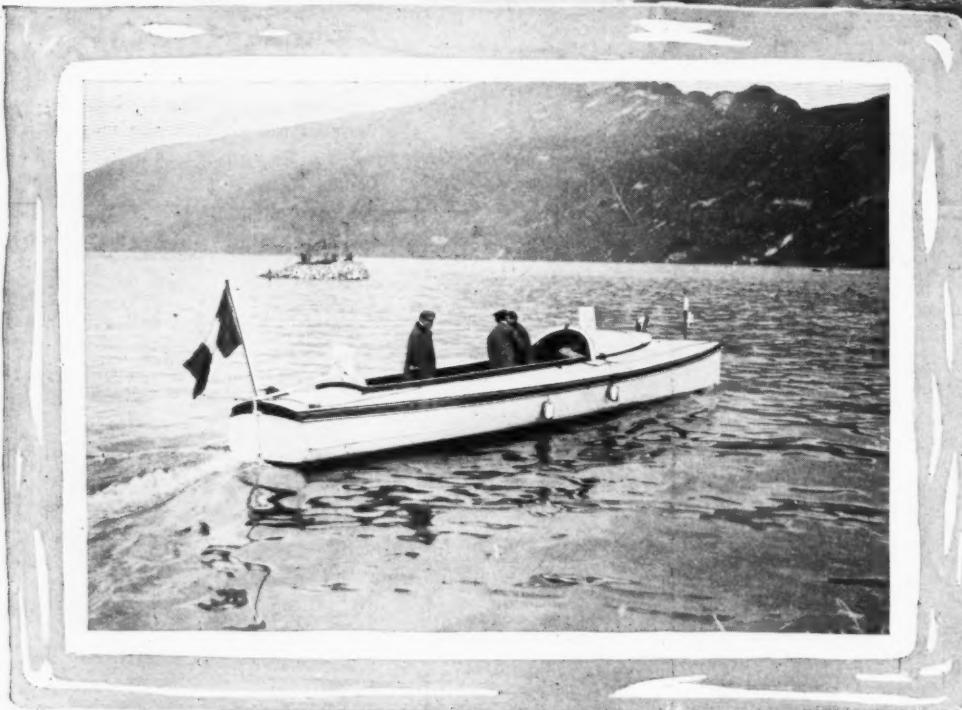
was by far the largest boat entered, with engines of 300-horsepower; but while manoeuvring in the harbor the day before the race Dubonnet collided with the dock gates, badly crumpling her bows. Platers and riveters worked all night so that the damage was temporarily repaired, but in the race Dubonnet seemed dull of speed and soon quit.

Rounding the mark boat at Folkestone, the first to flash by was Palaisoto I in 1 hour 9 minutes 45 seconds; La Rapiere was second in 1 hour 9 minutes 49 seconds, Napier II was third in 1 hour 10 minutes 45 seconds, 5 seconds ahead of the only other English boat in the race, Napier. After leaving Folkestone Palaisoto I had trouble with the ignition owing to the amount of water which came aboard. La Rapiere then went to the front. By this time the sea ran higher and the extra size and weight of the English boat began to tell, so that 8 miles from Boulogne she overhauled La Rapiere, easily holding the advantage to the end. She had plenty of time to have crossed the right finishing line had Skipper Macdonald of Napier II discovered his error sooner. In the cruiser class Forces Pas was first in 3 hours 31 minutes 47 seconds. A

French torpedo boat pre-



LA RAPIERE IN ACTION



FORCES PAS, WINNER OF THE CRUISER CLASS IN CROSS CHANNEL RACE

ceded the racers and had its work cut out to stay in front of the little craft.

As given out, the official times were as follows: La Rapiere, 2 hours 25 minutes 50 seconds; Napier II, 2 hours 27 minutes $\frac{1}{2}$ seconds in the racer class. In the cruiser class: Forces Pas, 3 hours 31 minutes 47 $\frac{1}{2}$ seconds; Dietrich II, 4 hours 27 minutes 5 $\frac{1}{2}$ seconds; Cazmoto, 5 hours 21 minutes 22 seconds; Chantiers du Pas de Calais II, fishing boat, 7 hours 8 minutes 27 $\frac{1}{2}$ seconds; Gardiner-Serpellet, steam, 7 hours 11 minutes 16 $\frac{1}{2}$ seconds.

Mercedes-Charles lost the course, her engines broke down and finally she drifted past Calais, when she was towed into the harbor. The Fiat gave up at Folkestone, so did Presse and Aya IV. Chantiers D'Antibes quit.

ERIN WINS THE CHICAGO-MACKINAC EVENT



Chicago, Aug. 1—The endurance race of the Chicago Power Boat Club to Mackinac island has been run and won, but it must be admitted that the contest did not pan out as well as the officers of the club expected it would. Erin, with a time allowance of 11 hours 12 minutes over the scratch boat and 6 hours over Dusty Syde, won the race, but victory perched on her bows only because of the liberality of her handicap, for Dusty Syde, the Detroit boat, was first to register at the Mackinac Island Yacht Club, arriving at 25 minutes after 4 o'clock Monday morning, while Erin got in at 8 a. m. the same day. Originally ten boats entered for the race, but at the start from off the Van Buren street gap only four lined up. Violet Louise, the scratch boat, and Marion were there, besides Dusty Syde and Erin. It was not until 12:50 p. m. that the preparatory gun was fired to warn the boats to make their final preparations for their trip of 330 miles.

On board Erin were T. H. Bullock, H. T. Chase, Jr., A. Weckler and C. A. Hunt. Skipper Bullock was practically new at the game,

saving crew an hour to release the boat. The keel and a wheel of the blade were damaged. After undergoing repairs Violet Louise put to sea at noon and continued the race. The boat's lights were extinguished on the way to Racine, while mistakes were made in lights at different ports. When Wind Point was reached the skipper, unable to see the chart, mistook the light for Racine and attempted to make the harbor, running on the beach instead of into a safe port.

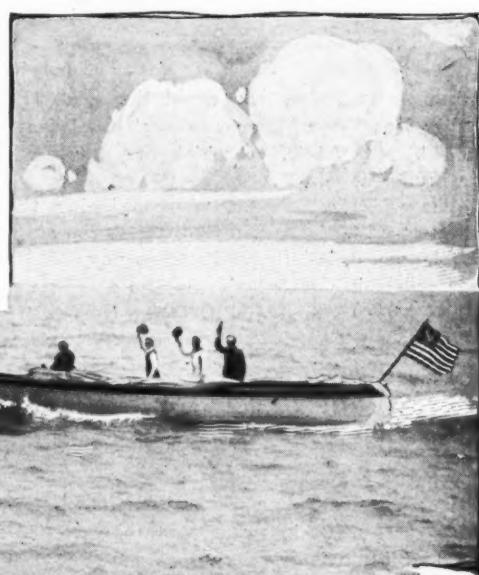
Captains of Erin and Dusty Syde had a thrilling tale to tell at Mackinac. Heavy weather prevailed for most of the 330 miles, the waves washing over the decks and cockpits, drenching the crews. It took the Detroit boat 40 hours 25 minutes to make the 330 miles, while the Erin took 44 hours. The race was for the \$250 Rudder cup presented by Thomas Fleming Day.

Complete returns on the race were not had in Chicago for several days after the completion of the contest. Marion's return to town was not reported until today. It developed

that the crew had turned back early in the race because of the heavy seas. Like the cub reporter sent to cover a fire and who failed to report to his city editor because he thought it was not news "because every one in town seemed to be there," the Marionites neglected to report to the Chicago Power Boat Club, causing the officials considerable worry, it being feared that the boat had come to grief somewhere.

Discussing the race as a race, local motor boat men do not regard it as much of a test. They compliment the officers of the Chicago Power Boat Club for their efforts in promoting the affair, but blame the six skippers who had cold feet and withdrew for making it more of a farce than a contest of modern motor boats, for it deserved a better fate.

VIOLET LOUISE AS SHE STARTED



DUSTY SYDE, FIRST BOAT TO FINISH

it being his first trip in charge of a motor boat, except in Erin's tryout in the Chicago river. Erin had 11 hours 12 minutes start over Violet Louise. Dusty Syde, the Detroit boat, had on board her owners, Dr. Wadsworth Warren and Howard I. Shaw, besides Arthur Fournier, mechanic, and Joe Scott, cook. She had a handicap of 4 hours 57 minutes. J. T. Counsell, B. Strohm, F. L. Gregory and J. Thulin were on the Violet Louise. W. D. Hamilton, W. Bonn, G. Anderson and J. B. Meurk manned Marion.

The first report of the progress of the race came from Racine, Wis., and conveyed the information that Violet Louise had been beached 3 miles north of the town, narrowly escaping being wrecked. Heavy seas saved the boat and men by carrying them high and dry on the beach. The men were not discovered until daylight and it took the life



ERIN IN CHICAGO HARBOR JUST BEFORE START OF THE LONG RACE



MALICIOUS NEWSPAPER ATTACKS

WHEN a great metropolitan daily paper sets its mind upon accomplishing anything, it seldom leaves a stone unturned until it has succeeded. Consequences cut little figure, methods are not considered—the prime object is to get there in any way and at any cost.

The automobilists of most of the larger cities of the country have had to fight for the few privileges they enjoy, and they have had to battle against the acknowledged powerful influence of the daily papers.

The motorists of Chicago have been brought prominently before the world through daily paper attacks and clamor of an inconsiderate and biased public, to which the lay press naturally bows.

The Chicago Tribune, while enjoying the greatest advertising patronage from the automobile world, is its most bitter enemy and its one redeeming feature is that no amount of advertising patronage will swerve it from its chosen path.

The Tribune has of late been a persistent opponent to motoring; it has lost no chance to attack and has seldom been known to commend. As an artful prevaricator it has succeeded beyond its own expectations. The Tribune's statements have been characterized chiefly by half-told tales rather than by absolute misrepresentations of fact, and half-told truths are as near full-fledged untruths as it is possible to produce.

A recent violent attack on motorists on the part of the Tribune was answered by a member of the editorial staff of MOTOR AGE and the communication, containing indisputable facts and statistics, was returned as unavailable "because of its length," some 800 words. But a Tribune representative sought similar facts and figures from MOTOR AGE and statistics as to accidents caused by automobiles and other conveyances were produced and noted.

MOTOR AGE had nothing to hide. It acknowledged the presence of reckless drivers and the need for their suppression, and offered its aid to that end. Its statements and figures and suggestions were culled and contorted so cleverly that, while the Tribune's quotations were correct in a sense, so much was left untold that not even the groundwork was left and MOTOR AGE was placed in an unenviable light through the Tribune's half-told truths.

MOTOR AGE charges the Tribune with wilfully and mischievously misstating the whole truth for the purpose of bolstering up its own case. Had it sought to learn the number of accidents caused by automobiles and other conveyances using the public highways its efforts would have been appreciated and

its work would have borne a semblance of fairness, but the elimination of those facts which appeared to be against the Tribune's policy made plain the fact that the Tribune is afflicted with a violent attack of motorphobia.

The redeeming feature of the Tribune's attacks, however, is the fact that in its zealousness it has overreached; that its statements are so biased that any American who believes in hearing both sides of a case before passing judgment will appreciate the unfairness and judge accordingly.

INCONSISTENCY IS RIFE

INCONSISTENCY crops up in automobilizing about as fast as one can keep track of it, in fact, the whole automobile world is cursed with it. There is not a law or an ordinance that is not reeking with it, and automobilists grin and bear it, mainly because they are not properly organized and equipped to fight it. Furthermore inconsistency is gaining ground so rapidly that this, that or the other thing will have become a custom of such long standing that it will have become a precedence and will of itself stand on this ground, notwithstanding the fact that there is no legal or moral excuse for it.

Automobilists have only themselves to blame, they have fought themselves rather than those who are fighting them. All over the country automobilists submit to being specially taxed and licensed. Owners of horse-drawn vehicles enjoy privileges that have been accorded them for years. Automobilists must submit to the dictation of the driver of the horse when he raises a hand as a signal to stop. The eagle eyes of the constable, the sheriff and the policeman are upon the automobilist so attentively that the sight toward the horse is blinded. The daily paper is loud in its denunciation of the automobile and in defense of the horse and the horse driver.

Is this all within reason? Are automobilists so terribly bad that they are deserving of this attention? Or is it simply because it is the good and ripe fruit that is knocked off the tree? It may be argued that nobody is guilty of throwing sticks at any but the good ripe fruit, and on this basis the automobilist must be content to consider himself exceedingly ripe and particularly good fruit. At any rate, he is a target for all the missiles that can be thrown and he is kept pretty busy dodging. Unless some shield is put up or unless some attempt is made to drive off the assailants, it is reasonably sure that the sticks that are being thrown will sooner or later begin to cause lumps and swellings that will be hard to remove.

Motorphobia has extended to all parts and to all people, not excepting some courts. Some of the decisions that have been rendered, and

that happen to be final, are so discriminating that all precedence has been upset and the courts have thrown aside the constitutional provisions which guarantee equal rights to all and they say that one class may and another class may not use the public highways; that if one does use them it may do so without molestation and restriction and the other shall bear tags of identification and pay for such use in addition to paying ordinary personal property taxes. And it is said to the automobilist that he shall not do this and shall do that, and the other ordinary citizen may enjoy privileges which are denied the automobilist and the automobilist may not enjoy those which are given the ordinary citizen.

In this country there is an automobile club in practically each city of any importance, in addition there are national and semi-national organizations, yet all the work that has been done toward rectifying these abuses can be told in a very few short paragraphs. Races, tours, gymkhanas, parades and the like are too numerous to permit other work to be done.

As a matter of fact, of all that the clubs have attempted to accomplish, from one end of the country to the other, that which tends to establish the rights of the automobilist has received the least attention and yet is the whole foundation upon which the structure is built. The foundation is too weak to withstand much more. Take away the social side of the clubs and all their usefulness dwindle. It is true that a few have made spasmodic attempts to cut things open and tell the authorities what's what, and nearly as often have these attempts resulted in failure; in fact, the number of successful cases are so few as to be counted on the fingers of one's hands. It has been, generally, a case of bluff and bluster with a little self advertising. All of which suggest that clubs to be of benefit to the automobilizing world, must accomplish something which shall be of practical value, something which shall endure, and this something has not as yet come to the surface.

CHICAGO LEADS NEW YORK

NEW YORK is patting itself on the back because in the great Empire state there have been issued 4,802 automobile licenses, and in New York, Massachusetts, New Jersey, Connecticut, Pennsylvania, New Hampshire, Vermont, Rhode Island, Maine and the District of Columbia a total of 11,733 have been issued. The New York Herald compiled the figures and contents itself with the statement that "the automobile is no mere passing fad of a year." In Chicago alone there have been issued an even 3,000 licenses, according to the list published this week. In this list appears some seventy-two re-issues, where license tags have been lost, and other numbers do not appear at all, so that the net list to date is somewhere near 2,200 automobiles actually in use in Chicago alone, to say nothing of the other cities in the state. It is safe to assert that if the licenses of Buffalo, Rochester, Syracuse, Utica, Albany and other large New York state places were taken from this 4,802 list, Chicago would stand at the head of the list as far as cities are concerned. In the matter of the value of cars, New York would undoubtedly lead. This is natural. New York millionaires are accustomed to going to Europe once or twice a season to visit Continental haberdashers, and it is natural, that they should give preference to the European car.

Jump Sparks

After all, is Mr. Glidden proud of the tour he inaugurated?

Have you engaged rooms at the farmhouse for the Vanderbilt cup race?

Some automobile tours prove frosts even if they are not held in high altitudes.

John D. Rockefeller has been on his good behavior this season so far—he hasn't raised the price of gasoline once.

But all of the agents of the country have not joined the new dealers' association—there are one or two left on the outside.

The Hammer Club delegates who were at the finish of the St. Louis and St. Paul tours, were on hand when the Glidden tour ended as people thought they would be.

The fact that some of Chicago's north side suburbs are raising the cross walks 6 inches to stop scorching automobiles from exceeding a speed limit will have no effect on some drivers who are used to touching only the high spots anyway.

The advertisement of the city electrician of Chicago asking for bids to furnish him with a gasoline automobile may strike the humorist as a comical paradox, but it only tends to show the effort of even city officials to keep abreast of the times.

A poor little harmless canine spreads terror to a community if it is started off with a cry of mad dog; but the dog itself is seldom as harmful as the cry that follows it. The cartoonist has aptly illustrated the modern dog and his tormentors, including the hold-up man and the policeman with a gun.

The Week

Comparison of registration in the United States and Great Britain shows Uncle Sammy is rapidly overhauling John Bull in race for automobile supremacy.

Erin, with a time allowance of 6 hours, wins endurance race of Chicago Power Boat Club to Mackinac, although Dusty Syde is first in.

Collier smashes motor cycle records in England from 6 miles up to the hour, 54 miles 523 yards being covered in 60 minutes.

Walter Christie fails to land mile record at Cape May, but shatters American kilometer record, doing distance in 25 seconds.

Error costs motor boat Napier a race, la Rapiece being given decision on technicality in cross-channel event.

Sensible though novel race proposed as a part of convention of American Road Makers at Port Huron, Mich.

Six out of twenty-three motor cyclists survive 400-mile reliability trial held in Ireland.

Chicago's suburban populace and officials afflicted with motorphobia.

Long Branch carnival postponed to August 18-26.

Anyhow, Mr. Christie didn't say positively that he would.

First thing that somebody knows the Automobile Club of America will break out and be heard from.

To test the relative strength of the horse and the automobile, why not hold the horse and automobile shows the same week?

When a man drives his own automobile and is called a chauffeur, is it any sign that he is a coachman because he drives his own horse?

Give up racing, and tours, and reliability trials, and other motoring stunts and settle down to the real thing—the gymkhana—and avoid all scandal.

An English yacht builder lays a poor season's business to the fact that people are spending their spare money for automobiles, forgetting that motor boats have superseded sailing craft where pleasure is sought.

In commanding a police officer for sending a bullet into the tire of an automobile some Chicagoans put a premium on outlawry. As if Chicago with its gambling, its strikes, its holdups and its grafting officials had not enough to answer for! The superior officers of the policeman in question must feel a sense of weakness in not being able to cope with a few overzealous speed merchants without reverting to the use of firearms! Let suburban authorities take lessons from the officers of the South park system—which has driveways that tempt scorching motorists—who see more automobiles in a day than other officers do in a week, but who seldom have to arrest or report an accident.



THE MODERN MAD DOG SCARE

UNCLE SAM AND JOHN BULL

Comparison of Registration of Two Countries for Past Year Shows United States is Rapidly Overhauling Great Britain in the Exciting Race for Automobile Supremacy

With the official report of the registration of motor vehicles in Great Britain and a statistical review of the growth of automobilism in ten of the eastern states of this country at hand, a comparison of figures leads many to think that the United States has almost caught the United Kingdom in the race for automobile supremacy. To get this standing, however, it is necessary to throw out of the count motor cycles which are more popular than automobiles in Great Britain, while here that sport is in its infancy. King Edward and his people claim to be using at the present time 31,997 automobiles in England, Ireland, Scotland and Wales, while the figures gathered and published by the New York Herald for the states of New York, Massachusetts, New Jersey, Connecticut, Pennsylvania, New Hampshire, Vermont, Rhode Island, Maine and the District of Columbia show that 11,733 automobiles are in use in these states. Of these 9,153 are American gasoline cars, 597 foreign gasoline cars, 1,407 steam vehicles and 576 electrics.

With these statistics to guide it, the Herald estimates that 10,000 cars have been sold this year, since January 1, in the ten states and that for the country as a whole 25,000 cars have been disposed of. It is figured that the aggregate selling price for the new cars in the ten states is \$20,000, with \$43,750,000 for the entire country. Of the American gasoline cars sold in the states mentioned 6,994 were made under the Selden patent and 2,159 were unlicensed under that patent.

"New York, Massachusetts and New Jersey, in the order named, are the three great automobile states," says the Herald. "The

registrations for 6 months of pleasure motor vehicles of all motive powers in New York State was 4,802; in Massachusetts, 2,169, and in New Jersey, 1,566. A small proportion of registrations in adjoining states may be duplications of machines and the transfer of second hand cars may also figure in a few of the registrations noted.

"An interesting feature of the Herald's statistics is the evidence of the local preference for different types and makes of cars. As an example, the Stanley steamer, with only fifteen registrations in New York, had 349 in Massachusetts, as against 81 in that state for the White. The New England states are strong in steam carriages, Massachusetts having 482, New Hampshire, 116; Vermont, 123, and Maine, 175, in this year's registration. In foreign registrations New York leads with 410, New Jersey has 71, Massachusetts 53, Pennsylvania 36, Connecticut 14, New Hampshire 6, District of Columbia 3 and Rhode Island 2. An interesting race for the lead is shown between the Panhard and Mercedes cars, the former having 116 and the latter 114 registrations. The Cadillac is first in reputation of light American cars, while the Pope-Toledo and Locomobile are in front among the higher power machines. The percentage of American gasoline cars licensed under the Selden patent is 76.41.

"The registrations show that eighty-four different makes of American gasoline cars are used in the eastern states, while twenty-six foreign makes are represented. There are ten makes of steam machines and an equal number of electric vehicles.

"The distribution of 1905 gasoline, electric

and steam vehicles is shown in the following table:

	American	Foreign		
	Gasoline	Gasoline	Electric	Steam
New York	3,790	410	334	268
Massachusetts. 1,560		53	74	482
New Jersey	1,352	71	45	98
Connecticut ..	818	14	7	53
Pennsylvania. 474		36	16	21
N. Hampshire 351		6	10	116
Vermont	240	0	6	123
Rhode Island. 122		2	14	40
Maine	189	0	4	175
Dist of Colum. 257		5	66	31
 Totals	9,153	597	576	1,407

"It is believed that very few duplications, if any, have crept into this list. Machines registered in more than one state, so far as possible, have been eliminated from all but the state in which the owners reside. New Jersey is the greatest sufferer in this regard, several hundred New York automobile owners also carrying New Jersey license numbers.

"The registration in motor cycles is interesting. In all there are 700, New York having 209, New Jersey 193, Connecticut 117, Massachusetts 64, District of Columbia 37, New Hampshire 29, Pennsylvania 19, Vermont 16, Maine 11 and Rhode Island 4."

Great Britain boasts an increase of 67.34 per cent in the number of motor vehicles in the United Kingdom since the registration of a year ago. Returns received up to July 1 show that at the present time 66,703 motor vehicles are in use in King Edward's domain, divided into three classes, of which 31,129 are pleasure vehicles, 34,706 are motor cycles and 868 heavy cars. In the way of pleasure rigs Scotland shows the greatest increase with 73.48 per cent; England is next with 69.89 per cent; Wales third with 64.7 per cent, and Ireland last with 61.44 per cent. England now has 26,890 pleasure cars in use, 29,535 motor cycles and 791 heavy rigs. A year ago she had 15,827 cars, an increase of 11,063. Wales had only 7,841 pleasure cars, 1,194 motor cycles and 29 heavy cars. Scotland had 1,373

ROUND-UP OF AUTOMOBILES IN TEN EASTERN STATES

Peerless 3 37 40 11 3 7 2 . . . 5 103
 Other American gasoline cars total: Wayne, 70; Haynes, 60; Yale, 60; National, 60; Crest, 59; Cameron, 58; Standard, 57; Queen, 54; Acme, 43; Premier, 43; Royal, 42; Jackson, 40; Marion, 36; American, 35; Studebaker, 32; Apperson, 31; Searchmont, 29; Walter, 27; Buckmobile, 26; Mitchell, 21; St. Louis, 19; Stearns, 17; Covert, 17; Mathewson, 17; Phelps, 17; S. & M. Simplex, 15; Cleveland, 15; Rainier, 15; Stoddard, 15; Union, 14; Jones-Corbin, 14; Worthington, 13; Buffum, 12; Reliance, 10; Berkshire, 9; Pungs-Finch, 6; Ardsley, 6; Rochester, 5; Upton, 5; twenty-one other makes, 61. Total, 9,153.

Miscellaneous, including second hand machines and home made machines, 177. Total, 1,407.

Napier	7	3	1	11
Other foreign totals:				
Martini	6	Daimler	6	Hotchkiss
Cudell	2	Gobron-Brillie	2	Berliet
557	2	Peugeot	2	Argus
				Benz, Corre and Delahaye

ELECTRIC VEHICLES												
Make	Conn.	Mass.	N. Y.	N. J.	N. H.	Pa.	Vt.	R. I.	I. D.	C. Me.	Total	
Electric V. Co.	3	20	169	5	2	13	3	2	..	..	217
Baker	42	3	..	1	..	1	28	..	75	
Vehicle E. Co.	1	47	..	..	1	..	4	..	53	
Waverly	..	2	12	4	5	..	..	9	17	3	52
National	..	11	17	2	3	..	..	1	..	..	34
Buffalo	15	1	..	..	..	1	..	..	17	
Lansden	2	4	..	..	..	..	9	..	15	
Woods	8	2	..	..	..	..	..	..	10	

Miscellaneous, including second hand machines and home made machines, 104. Total, 576.

RECAPITULATION FOR TEN STATES

American gasoline automobiles, 9,153; foreign gasoline automobiles, 597; steam vehicles, 1,407; electric vehicles, 576. Total, 11,733.

Estimated number of automobiles sold this year in ten states, 10,000; estimated number of automobiles sold this year in the United States, 25,000; estimated aggregate selling price of new cars in ten states, \$20,000,000; estimated aggregate selling price of new cars in the United States, \$43,750,000.

cars in use a year ago, now she has 2,382. Sandy also has 2,156 motor cycles and 24 heavy cars. Ireland is rapidly getting in the band wagon, too, Paddy announcing 1,073 cars as against 664 12 months ago, with 1,821 motor cycles and 24 heavy cars.

Chicago's strength in the automobile world was shown July 15 when the Chicago Daily Journal published a complete list of the licenses issued. In all 3,000 numbers are out, but this does not indicate truly the actual total, for many have lost their tags, necessitating the issuing of new ones. This brings the count down to 2,208, of which sixty-nine are women. The Journal's list is a valuable one in that it enables the trade to keep tab on the town, as well as affording the curious an opportunity to find out who owns any car that happens to hit their fancy. Arthur J. Eddy holds tag No. 1, while 13 belongs to T. I. Motter of Oak Park. F. P. Fraser has 333, George N. Pratt 444, C. W. Leeming 555, W. R. Gibbs 666, H. Musgrave 777, Harry Brown 888, while the coveted 999, emblematic of the famous Empire express engine on the New York Central Railroad, belongs to Charles Plamondon. W. G. Walling holds 1111, and A. M. Sowler 2222. A. L. Weil has 1905, standing for the year of issue, while 3000 was given to H. E. Perry in place of 2710, which was lost.

ARE HAMSWORTH CUP BOATS

Paris, July 19—Eleven candidates will compete in the British international motor boat cup race, to be held in the Bay of Arachon September 11. France has named three, Great Britain six and America two. Only three boats are allowed in from each country, so that an elimination contest is necessary August 1 to decide the British representative. The Napier, Napier II, and Napier Minor, with Napier motors, the Brooke I with a 300-horsepower Brooke motor; the Hutton with a Hutton motor, and the Competitor with a 100 Pyddeley motor are the candidates. France has named the Dietrich VI, de Dietrich motor; the Palaisoto, Panhard-Levassor motor, and the Hotchkiss, with a Hotchkiss motor. America's two boats have been entered by the Smith & Mabley Co., of New York. W. Gould Brokaw's Challenger, which competed unsuccessfully last year, and E. R. Thomas' Dixie, both of them regarded as speedy craft with chances of winning the cup, are expected to represent the United States, although the Dixie's nomination has not been confirmed. Belgium may also have a shy at the cup, it being reported that a boat with an aluminum body is being constructed at the works of John Cockerill & Co., at Antwerp, with the intention of paying a double entry fee and making a post entry.

IN MOTORCYCLE CHAMPIONSHIP

Paris, France, July 19—In connection with the world's cycling championship meet at Antwerp is being run for the first time a motor cycling event which is supposed to carry with it the world's title. The distance is 5 kilometers, the machine being limited to 112 pounds. Four heats were run Sunday to weed the field of eleven down to the final, which will be decided next Sunday. Olioslaegers, on a 6-horsepower twin-cylinder Minerva, won the first heat in 3 minutes 29 $\frac{1}{2}$ seconds, Pernette took the second in 3 minutes 8 $\frac{1}{2}$ seconds, Anzani captured the third in 3 minutes 24 $\frac{1}{2}$ seconds on a two-cylinder Buchet, while the fourth was a walkover for Coppin on a Minerva.

MAKE WAR ON MOTORISTS

Chicagoans Aroused by Actions of Authorities in Towns Along the North Shore Drive

Chicago, August 2—Motorphobia in its most virulent form is raging in the towns along the north shore and the crusade against scorching has apparently made fanatics out of the representatives of law and order in the hamlets through which the famous Sheridan drive passes, with the result that the conservative element of motoring has to pay for the follies of those afflicted with the speed mania. Fuel to the flame was added last Wednesday when Policeman Arthur Johnston of Evanston deliberately fired at a car owned by M. H. Cartwright, 528 Lake avenue, and driven by Chauffeur William Walsh. The car was caught in a speed trap and the policeman claimed Walsh was going at a speed of 23 miles an hour and refused to stop at his command. Johnston fired two shots and succeeded in puncturing one of the tires. Thus crippled the machine came to a halt.

This incident stirred up both motorists and authorities alike. The Chicago Automobile Club at once took sides with Cartwright and through Attorney Gorham has started to prosecute the offending policeman, who was arrested Saturday night on a warrant sworn out by Gorham. Johnstone, however, is being patted on the back for his act by Chief Frost and citizens who are making war on motorists.

Another car, driven by Ernest Stevens, chauffeur for J. R. Worthington of Highland Park, was brought to a stand by the sight of a loaded pistol in the hands of Officer Laish. The chauffeur ducked under the seat and obeyed the hint.

To add to the excitement along the north shore came what is believed to be the first real holdup of an automobile ever recorded, in this country at least. That the robbers

profited by the tip furnished by Officer Johnstone, who plugged holes in the tire of Cartwright's car last week, is believed by many, for the modern Jack Sheppards brought their prey to earth by firing fifteen shots at the tires, puncturing every one of them and bringing the car to a standstill so that they could rob their victims at their leisure.

Three men participated in the holdup, which occurred Monday night in a lonely spot midway between Winnetka and Kenilworth in that section of Sheridan drive which is skirted on either side by the timber known as Hubbard woods. C. A. Woodruff, 6703 Lafayette avenue, was driving his car through the patch of wood at about 10:30 p. m. With him were Mrs. Woodruff, Mr. and Mrs. H. G. McClellan and Mrs. W. A. Schlossman, who were on their way to Winnetka, where they proposed to pass the night. They were climbing Hubbard hill when they saw in front of them three men with leveled revolvers, who called on Woodruff to stop. The car was going so fast, though, that it shot by the robbers while the driver was trying to obey the command. Then the gun play started and the fusillade of bullets punctured all four of the tires, forcing the car to stop. The tourists were marched single file back to the road toward Kenilworth, some 50 feet, while one of the robbers carefully threw a blanket over the lights of the cars to avert suspicion in case anyone passed. After robbing their victims, securing about \$250 worth of booty, the holdups fled through the woods, while the tourists resumed their journey on flat tires to notify the authorities.

Taking this gun play as its cue, the Chicago Automobile Club has started a crusade on the motorphobists as well as the scorchers who are bringing the sport into disrepute. Chief of Police Collins was asked by the club to give its officers and directors the powers of special police and to allow them to wear stars. These permits were wanted by John Farson, Ira M. Cobe, W. G. Lloyd, Harry M. Taylor, Sidney S. Gorham, Charles L. Furey, L. E. Myers, T. J. Hyman, Benjamin H. Marshall, Dr. Frank H. Davis and Robert Tarrant, who desire to attempt to stop and arrest scorchers wherever they see them. The chief, however, could not grant the permission, so the park commissioners have been appealed to. The club will also fight the tyranny of the town boards and the unreasonable police regulations by applying for injunctions against the village officials of Glencoe and Winnetka, where a "bump the bumps" arrangement is planned. The Lincoln park commissioners will also be asked to throw open all roads in the park for the use of automobiles.

The bump the bumps arrangements as planned at Glencoe and Winnetka consist of raising the street crossing to a level with the sidewalks, which would make automobile traffic through the town slow and tortuous besides racking cars attempting to pass over the obstructions at any kind of speed. President Jones of the Winnetka board threatens that if he is enjoined that he will stop every automobile at the north and south ends of the village and insist that they travel at a snail's pace while within his jurisdiction. The Glencoe authorities have already let the contract for the bumps. The obstructions will be about 4 inches in height and are not expected to interfere with the progress of cars going at a legitimate pace. As a result of all this, Sunday in Chicago was an uneventful day.

COUNT IN UNITED KINGDOM			
	Cars	Motor Cycles	Heavy Cars
England—			
County Councils....	20,144	20,561	544
County Boroughs....	6,746	8,974	247
Totals	26,890	29,535	791
Wales—			
County Councils....	608	884	29
County Boroughs....	176	310	..
Totals	784	1,194	29
Scotland—			
County Councils....	1,399	1,462	13
County Burghs....	983	694	11
Totals	2,382	2,156	24
Ireland—			
County Councils....	765	1,253	18
County Boroughs....	308	568	6
Totals	1,073	1,821	24
Grand totals, 1905....	31,129	34,706	868
Grand totals, 1904....	18,340	21,521	
Total increase ...	12,789	12,185	
Percentages of increase of pleasure cars registered in the several countries of the United Kingdom:			
England	1904	1905	Increase age.
England	15,827	26,890	11,063 69.89
Wales	476	784	308 64.7
Scotland	1,373	2,382	1,009 73.48
Ireland	664	1,073	409 61.44
Total	18,340	31,129	12,789 69.73
Total number of motor vehicles registered in the United Kingdom:			
Percent-			
1904 1905 Increase age.			
Pleasure cars....	18,340	31,129	12,789 69.73
Motor cycles ...	21,521	34,706	13,185 61.26
Heavy cars	868	....	....
	39,861	66,703	26,842 67.34

BLUE FLYER MISSES MILE

Christie Balked in Attempts on Coveted Record at Cape May by Weather—Lands American Kilometer, Though, Bringing it Down to 25 Seconds—Crowd of 15,000 at the Meet

Cape May, N. J., July 31—While Walter Christie has been unable so far to break the world's 1-mile straightaway record, held by Bowden at 32½ seconds, he is convinced that the mark is at his mercy over the Cape May course as soon as he is given decent weather. Three times he went after the record in the meet held here Saturday, but 38½ seconds was the best he could do, owing to the rain and the rising tide. Today he went after one of the minor records in the Blue Flyer and succeeded in smashing the American kilometer, doing 25 seconds flat as against the previous best of 25½ seconds.

The fates, in the person of one J. Pluvius, seem to be determined that the exact value of the splendid beach at Cape May as an automobile racing track shall never be known. A week ago Saturday the moist gentleman was kind enough to begin work the day before the races, and the officials were enabled to announce the postponement in ample time to save disappointing the large crowd. But last Saturday the wily god who is popularly supposed to look after the celestial water works waited till "Wag" got out his gun to send the first bunch of racers away from the tape, and then turned on the spigot. It was none of your easy-going summer showers, either; but a regular downpour, backed by a good stiff breeze, which rendered goggles useless and drove the big drops into the contestants' eyes. The rain was so heavy, indeed, that each drop, as it descended on the hard beach made a little cup and in a quarter-hour fast time was an impossibility—the hard-packed surface was gone. Walter Christie whose trials with his Blue Flyer were expected to result in new world's figures, early announced his intention of not going for the records; but later made three or four unofficial runs, timed by the McMurtrie system, but failed to approach the figures made at Ormonde last winter by Bowden.

The tides necessitated starting the events at 10 o'clock in the morning, and at that hour the beach and boardwalk contained nearly 15,000 spectators, strung along the course between the red flags which indicated the beginning and finish of the mile. When the first drops fell the crowd held its ground; but when the steadily-descending globules of moisture began to grow in weight and frequency and blotted out of view the bunch of officials and vehicles at the other end of the course, all hands began to sit up and take notice.

Meanwhile the contestants and their cars were gathered round the starting point, some urging the starting of the races anyway and others positively refusing to start until the downpour had at least moderated in volume. After the temporary postponement the majority of the contestants did yeoman service carrying their friends and their friends' friends to their hotels 2 miles down the beach. At noon the rain was still pouring down, although it had decreased somewhat in volume; but as it gave evidence of letting up the officials decided to start at once, for the

rising tide was rapidly narrowing the track. In a twinkling "Wag" got the first bunch—touring cars not exceeding 20 horsepower, driven by owners—lined up and sent the five contestants down the course with a slanting rain driving directly into their faces. Christie consented to make a few unofficial trials with the Blue Flyer, although much of the best going had already been covered by the rising tide and what was left was badly softened and crippled by the heavy rain. After three or four limbering-up dashes Christie nodded to the McMurtrie outfit that he was ready. The tracks made by the Flyer and the other cars were plain evidence that the course was slow, and when .45% was announced for the first mile no one was surprised. The second trial showed an improvement—.42%—and the third still better—.38%. But Christie realized that he had no chance, under the conditions, of beating or even equaling Bowden's .32%, and sought his garage and dinner. Besides the bad weather had short-circuited the McMurtrie system somewhere and the timers were hunting for the trouble.

In order to preserve a straight course during his three trials Christie was compelled at two or three points to drive his machine through an inch or more of water where the tide was rapidly encroaching on the course, and at such times the low-lying machine and its driver were completely hidden from the spectators by the flying spray.

After the Blue Flyer trials the officials put on three special events, which were won, respectively, by C. J. Swain, in his 40-horsepower Winton, his third victory, by the way; C. C. Martin, in his 10-horsepower Cadillac, and W. C. Longstreth, in his 16-horsepower Maxwell.

Christie announces his intention of remaining here a few days longer, and if arrangements can be made to have the timing apparatus and officials also remain, an attempt may be made on Monday or Tuesday to break the world's mile and kilometer records, which Christie positively asserts are at his mercy under favorable conditions. His unofficial trials early this week convinced him that the Cape May course is the fastest in the world. So far as being discouraged, indeed, are the Cape May Club people that preliminary arrangements are now in progress for a whole week of automobile racing here some time during the latter part of August.

Following is the summary of the day's racing, all of the events being, of course, at one mile:

Touring cars not exceeding 20-horsepower, owners to drive—W. C. Longstreth, 16-horsepower Maxwell, first; C. J. Swain, 16-20-horsepower Winton, second; time, 1:35 2-5.

Touring cars not exceeding 30-horsepower, owners to drive—G. B. Fletcher, 28-horsepower Packard, first; George Rhedemeyer, 24-30-horsepower National, second; time, 1:46.

Touring cars not exceeding 40-horsepower, owners to drive—C. J. Swain, 40-horsepower Winton, first; J. A. Depew, 40-horsepower Winton, second; J. E. Mehrer, 40-horsepower Thomas, third; time, 1:07 1-5.

Touring cars not exceeding 20-horsepower, owner or chauffeur to drive—T. E. Swayne, 16-20-horse-

power Winton, first; C. J. Swain, 16-20-horsepower Winton, second; time, 1:35 2-5.

Touring cars not exceeding 30-horsepower, owner or chauffeur to drive—Walter Dubree, 24-30-horsepower National, first; G. B. Fletcher, 28-horsepower Packard, second; time, 1:37 4-5.

Touring cars not exceeding 40-horsepower, owner or chauffeur to drive—C. J. Swain, 40-horsepower Winton, first; J. A. Depew, 40-horsepower Winton, second; time, 1:22 1-5.

Touring cars not exceeding 10-horsepower, owner or chauffeur to drive—H. A. Wilson, 10-horsepower Cadillac, first; C. C. Martin, 10-horsepower Cadillac, second; time, 2:05.

Special event for 40-horsepower Winton cars—C. J. Swain, first; time, 1:23 1-5.

Special event for 10-horsepower Cadillac cars—C. C. Martin, first; time, 2:05 1-5.

Special event for 16-horsepower Maxwell cars—W. C. Longstreth, first; time, 2:04 2-5.

Exhibition miles by Walter Christie in Blue Flyer—First mile, time, :45 4-5; second mile, :42 2-5; third mile, :38 2-5.

COURSE AT ATLANTIC CITY

Atlantic City, N. J., July 31—Notwithstanding the fact that the rain marred the success of the race meet on Cape May beach last Saturday, the facts that upwards of 15,000 were present, despite threatening weather conditions in the early morning, and that nearly 300 cars were driven into Cape May before the races, have opened the eyes of those who have at heart the best interests of Atlantic City, the premier coast resort of the country. Fully 125 cars left here on Friday and early Saturday for the cape, and on their return many of their owners asserted that in their opinion the stretch of beach below this city, from Ventnor to Longport, while possibly not so wide, was equally as hard, and at low tide would afford an ideal course for short-distance racing, such as had been held on the Cape May strand. This stretch of beach is about 3½ miles in length and an effort will be made in the near future—possibly during the present week—to call local automobilists together with a view of inaugurating there such a series of events as, but for unfortunate weather conditions, would have proven so successful at Cape May.

CARNIVAL DATES CHANGED

New York, July 29—The Long Branch automobile carnival will take place August 18 to 26. The original dates were August 11 to 19, but the accident to W. J. Morgan in the White mountains necessitated putting the date back a week. The New Jersey Coast Automobile Association will have a meeting at Long Branch this week when arrangements will be completed for what promises to be a most interesting 8 days of automobile and sport. The West End casino is being put in shape for the automobile exhibit part of the carnival. Thomas B. Jeffery & Co. was first to wire for space followed by the E. R. Thomas Motor Co., Royal Motor Car Co., Oscar Lear Automobile Co. and the Wayne Automobile Co. The foreign exhibit promises to be a representative one, as the Standard Automobile Co. and Clement-Bayard Co. will exhibit.

The admission to the show will be as last year, without charge but by invitation, and the management will issue 50,000 family invitation tickets, which will be thoroughly distributed in New Jersey and the vicinity of New York among automobile owners and prospective owners. The sport part of the 8 days will commence Friday, August 18, with a matinee, open to residents of New Jersey, which of course means the summer as well as the winter residents. Saturday, August 19,

will be devoted to a general tournament and gymkhana sports, and this day will be free to all who care to attend.

The floral parade this year will be given on the last day of the carnival, Saturday, August 26, and as last year will start from the West End near the big casino. The non-stop 6-day automobile test, which will include a tire and fuel test, will start from West End 5 minutes after midnight on Sunday, August 20, and will finish 5 minutes before midnight on August 26, making a 144-hour run.

BRITONS BILL BIG MEET

London, July 18—What is expected to be the greatest motor meet ever held in England will open tomorrow on the seashore at Brighton, three days having been set aside for the purpose. At least 5,000 cars are expected to be present, while 375 entries have been made in the races, including Lancia, the Italian who almost won the Bennett cup. The races will be along the newly-made Madeira road and world's records are expected. The parade furnishes an excellent grandstand, running above the track at a height of 25 feet, so that the races can be seen from start to finish. The track is 6,900 feet in length, 240 feet in breadth and has a surface covering of Tarmac, laid on a prepared bed, rendering the track dust-proof. For those who care nothing for racing there will be touring cars and specially constructed trams to convey the visitors around town. Illuminated promenade concerts will be held each night. Four days of racing are provided for, the feature of the first day being a scratch race, standing start, over a measured mile, in which will appear J. T. C. Moore-Brabazon, Victor Miller, Charles Jarrott, Sir Ralph Gore, A. Lee Guinness, C. S. Rolls, Clifford Earp, J. E. Hutton, Theodore Schneider and Arthur Brown. Practically the same field will start in the features on the other days. Several historic cups will also be raced for, one on each day of the meet. It is expected that the affair will not only be popular with the nobility, but the masses as well.

FORD CHANGES IN NEW YORK

New York, Aug. 1—The Ford Motor Car Co.'s New York branch came into existence today. James Couzens, secretary of the company, and W. D. Gash, head of the John Wanamaker Co. sporting department, took part in the formal transfer. Gaston Plantiff, E. B. Jackson's right hand man in the local Wanamaker motor car department, has been installed as manager. Mr. Gash will continue at the head of the Wanamaker sporting department and Mr. Jackson will remain in its New York end. Wanamaker will handle motor car sundries and clothing. The Ford Motor Car Co. will also have a Philadelphia branch. W. W. Taxis is in negotiation for its management.

CLOSE CALL FOR KECK

New York, Aug. 2—Special telegram—Louis J. Keck, eastern manager of the Badger Brass Mfg. Co., is ill in this city, having narrowly escaped fatal poisoning. He returned from the Adirondacks Sunday and drank a glass of what he supposed to be water, but which proved to have been ammonia, left by a house maid who had been using it for cleaning. Physicians were hastily summoned and by the use of antidotes, saved Keck's life.

GOES TO PERCY PIERCE

Glidden Trophy Commission, at Boston Meeting, Awards Cup to Buffalo Automobilist

Boston, Mass., August 2—Special telegram—The Glidden automobile cup commission, consisting of Elliot C. Lee, president of the American Automobile Association and of the commission; George E. McQuesten, representing the Automobile Club of Great Britain and Ireland; A. G. Batchelder, representing D. H. Morris, president of the Automobile Club of America, and the donor, Charles J. Glidden, met at the Massachusetts Automobile Club parlors at 3 p. m. today and awarded the Glidden trophy to Percy P. Pierce, of Buffalo, driver of the Pierce Arrow.

W. K. Vanderbilt, Jr., representing the automobile clubs of Germany and France, could not attend. The commission elected George E. McQuesten secretary. The reports of the several contestants engaged in the tour from New York to Mount Washington and return were examined. Of the thirty-three cars which started, twenty-eight finished in New York. The commission highly commended the work performed by the truck manufactured by the Knox company, and also that manufactured by the Packard company for the excellent service rendered throughout the drive in carrying the baggage of the contestants, they arriving on time each night at the several controls.

Although individual observers were not carried on each car, the contestants as a whole were observers of the work that each one performed, and at the close of the drive voted for the three drivers they thought had made the best record. The commission by a unanimous vote awarded the trophy to Percy P. Pierce, of the Buffalo club, who had a perfect record throughout the run and received the greatest number of ballots.

The commission voted to place the matter of the 1906 tour in the hands of the touring committee of the American Automobile Association, which so ably handled it this year, giving the committee full powers to select a route, adopt rules and conduct the tour under the deed of gift. Thanks were voted to Augustus Post, chairman of the touring committee, and A. B. Tucker and A. L. Downs, managers, for valuable services. There was a grading in the award of certificates, and nothing to judge of the individual standing of a car save by the number of votes cast in its favor. The cards were granted as follows: Percy Pierce, with fifteen votes; Augustus Post, White; George Otis Draper, Packard; Ezra H. Fitch, White; Ralph S. Coburn, Maxwell; John C. Kerrison, Cadillac; E. A. Gilmore, Rambler; S. S. Stevens, Darracq; W. N. Epping, White; W. C. Temple, Pierce; Harold L. Pope, Pope-Tribune; C. E. Walker, Pope-Hartford; A. L. Pope, Pope-Toledo; Robert Lee Morrell, Locomobile; A. W. Church, Decauville; R. E. Olds, Reo; R. M. Owen, Reo; J. Mehlig, Knox; Carl H. Page, White; B. Briscoe, Maxwell-Briscoe; E. H. Cutler, Knox; G. H. Tyrrell, White; C. W. Kelsey, Maxwell; Walter C. White, White; C. J. Edwards, Cadillac, and Mrs. Joan Cuneo, White.

The certificates awarded to Messrs. Kelsey, Edwards, Mehlig and Mrs. Cuneo were class B certificates.

Although the commission would not officially

pass judgment on what may be the conditions a year hence, it expressed its ideas of the conditions which shall govern the contests of the future. It was quite evident from the conversation that hereafter there shall be official observers assigned to each car, and that certificates of different grades shall be awarded to the cars according to their individual performances, and not as they were this season, when all cars finishing according to rules and conditions received the same kind of a certificate, no matter what might have been done to it in the way of adjustment and repairs during the time the cars were in the controls.

OLDFIELD PUTS ONE OVER

Toledo, O., July 31—Although beaten by Barney Oldfield in the match race here Sunday afternoon, Earl Kiser gave the Green Dragon's master a scare and ran him so close that had it not been for an accident to the Winton Bullet II the Daytonite might have gained the decision over his rival. It all happened at the meet held under the auspices of the Toledo Motor Racing Association at the Lucas county fair grounds. From a standing start, Oldfield, in his Peerless Green Dragon, and Earl Kiser, in the Winton Bullet II, drove their cars in the first heat of 3 miles over a $\frac{1}{2}$ -mile track in exactly 3:49 $\frac{1}{2}$, both making the same time. The two cars drew up for the second heat, when it was discovered that the Bullet's front axle had been cracked nearly in two and that a nut and a portion of one of the bolts of the hub of the right front wheel had been broken off. Kiser, daredevil-like, offered to go ahead. The officials in charge of the meet would not permit of his starting, so the match was handed to Barney. The first mile was covered in 1:24 flat, the second in 1:12 $\frac{1}{2}$, the third in 1:11 $\frac{1}{2}$, which is 2 $\frac{1}{2}$ seconds under the record made by Oldfield in his race with A. C. Webb at Omaha last August. The third heat was run by Oldfield alone, the program being supplemented with "if necessary." Barney sent his green wagon over a course of 2 miles in 2:24 flat, exactly 1:12 for each mile, this being 3 $\frac{1}{2}$ seconds under the Omaha record on a $\frac{1}{2}$ -mile track in the contest with Webb. Of the purse of \$1,000 Oldfield got \$750, while Kiser received \$250, this split being agreed upon previous to the race.

George Soules also comes in for recognition, driving his four-cylinder, 20-horsepower Pope-Toledo car over a stretch of 2 miles in 2:43 $\frac{1}{2}$, the first mile being done in 1:19, as compared with the record of 1:24 $\frac{1}{2}$ made by Charles Burman in a 24-horsepower machine at Salt Lake City last November, where the record for the 2 miles on a $\frac{1}{2}$ -mile track was 2:49 $\frac{1}{2}$.

Another interesting contest of the afternoon was between George Soules and his brother, Charlie, the latter in a Pope-Toledo machine of 30-horsepower and four cylinders. Two miles were traced, the first one in 1:18 flat, the second in 1:22 flat. Then Charles Soules gave a 2-mile exhibition race against the world's record for 30-horsepower stripped stock cars. His car was sent over the course in 2:36 $\frac{1}{2}$, the first mile in 1:18 $\frac{1}{2}$, the second in 1:17 $\frac{1}{2}$, as compared with the previous world's record of 1:24 $\frac{1}{2}$ for 1 mile and 2:49 $\frac{1}{2}$ for 2 miles.

CHANGE IN AUTOCAR AGENCY

New York, Aug. 2—Samuel F. Randolph, Jr., eastern manager of the Diamond Rubber Co., will retire from the company's service October 1, having secured the New York agency of the Autocar, now held by A. G. Spalding & Bro.

BENNETT DRIVERS HOME

Tracy, Dingley and Lytle Return From Scene of French Race and Talk of Struggle for International Cup—Orlando Weber Makes Sage Observations on Cars He Saw on Trip

New York, Aug. 1—Joe Tracy, H. H. Lytle and Bert Dingley, the American team in the Bennett race, and A. E. Schaff and Orlando Weber, of the Pope forces, who witnessed the contest, arrived on Saturday on the Celtic. They are all, of course, brimming over with stories of the big contest.

Weber dropped in at the MOTOR AGE office to-day, and had much of interest to tell and many observations of value to make. Weber is far from displeased with the showing of the Popes in the great race. He thinks that considering the fact that they came from the longest distance of any cars that competed, and that the repairs were all made in a machine shop, while the French cars were repaired and partly rebuilt, in some cases, at their respective factories, the showing of America was creditable.

"But for such a course," he said, "with 300 turns, 200 of which are dangerous, and hills that are 'climbs to the clouds' in themselves, the three speed transmission is unsuitable. Four speeds ahead are necessary, so that on the fourth the car can run out to 70 or 80 miles an hour. There was not more than 1½ miles of straight-away on the whole course, where one could see the road stretching out in front of him."

"To my mind, the fastest cars in the race were the Fiats, and such seemed to be the general opinion after the race. Lancia, the driver of the Fiat which led until the last round, took the most dangerous curves at awful speed. The Darracqs, without any differential, were all very fast, and I rather expect to see them do something in the Vanderbilt race. Their trouble in the race was tires, on which, of course, the curve-skidding, without differential, was very hard. It was wonderful the way the tires were handled, particularly by Michelin crews. At each of the Michelin controls there were twenty men, who would pick up the car almost before it stopped and lift it on to wooden blocks. The tires were slashed off with a knife and the new shoe with inner tube inside was slipped on its place, partly inflated. An entire set of tires on Thery's car was changed and the car on the ground again in 5 minutes, as impossible as that sounds. The Michelin tires, however, did not stand as much as the Diamonds. Michelin had a new tire with Samson tread, on which the tread did not rise up from the shoe, but was flush with and a part of it. The Diamond tires were wonderfully successful and all the Americans and a lot of Frenchmen became very enthusiastic about them. Considering the distance that they were from home, the Diamond crews took good care of them. Five men were brought over from the United States and some more were obtained in Ireland to handle the tires at the controls. There were seven Diamond controls in command of Cliff Meier and about five men at each control. The knife was used, in French style, to remove the shoe in the quickest possible time, and they also used the snap-spring lugs, which snap tight instead of screwing up in the usual manner."

"There was a good deal of squeezing and scraping to get some cars in under the weight limit of 2,204 pounds. A Richard-Brasier had a wooden bar connecting the steering knuckles. Several cars got in by scraping the mud off the tires, particularly Samson users, who dug out the mud collecting between the rivets and took off their valve caps, to get down to weight. Don't laugh; that's true."

"Only the Wolseley was strengthened in any manner as to the wheels, wire having been wrapped about the spokes from the hubs to the rims. The Darracq of Wagner was equipped with wire wheels."

When asked about the tendencies of the design of the motors in France, Weber spoke strongly of his belief that there would be more valves on top, more jump-spark ignition, and more cars with chain drive.

"There is no doubt in my mind," he said, "about the chain-drive on a high-powered, and particularly on a racing car. The methods of drive on all the cars entered in the race showed the same idea. The only bevel-gear drive car in the race was the Napier, all of the others being double chain drive."

In regard to the cars from abroad that will surely compete in the Vanderbilt race, Weber said:

"When I left Paris I understood that all were coming who had entered; but now I hear differently. I am sure, though, that Wagner will be here with the Darracq, and also that there will be several Panhards at the start."

Joe Tracy confirms the statement of Orlando Weber that the Richard-Brasier people on account of the expense and because they think they would have everything to lose and nothing to gain by competing will not send over either Thery or Caillois. E. B. Gallaher, the importer of these cars, by the way, in view of this statement, says that if it be true he will sail at once for Europe and buy one of the cars and race it with one of his own drivers. Tracy says that he was at both the Darracq and Renault factories and was informed that no cars would be sent over by them. Weber declares that the Darracq was one of the fastest cars in the race and would surely be in the Vanderbilt contest. Secretary Batchelder, of the racing board, expresses no fear that France will not be represented by a full team in the contest, pointing to the fact that the French club will not be likely to forfeit its \$2,500 already paid in entry fees.

As to his own troubles, Tracy had not much to say beyond calling attention to the fact that he was the only competitor who had not had a chance to go over the course in his racer. This, he says, compelled him to devote the entire first round to experimenting with his car, which was too long for negotiating the sharp turns arising every mile or so of the way.

He had trouble with the overheating of his clutch bearing, and once he stopped for half an hour while a change was made of all his tires. The constant pulling at sharp turns was

terrific on tires, and most of the drivers were forced to change once during the race.

Tracy had just got nicely started and was making fast time in the third round when the race was declared finished. He had been the last of the eighteen competitors to start and was one and a half hours behind, otherwise he might have finished the race. He ascribed the poor showing of the Locomobile wholly to his inexperience on the course.

Toledo, O., Aug. 1—As this is the place where the car he drove in the Bennett cup race is made, naturally Bert Dingley headed this way after landing in New York on his way back from France. Dingley got here in time for the meet Sunday, in which he took part. Herbert Lytle, the other Pope-Toledo driver, was also expected, but he stopped off to visit his family in Boston. However, he will report here this week.

"Experience is a great teacher," said Dingley, in speaking of the results of the Bennett cup race. "We Americans have learned a great lesson, and, judging from what we have gained in point of knowledge, the expense is more than overbalanced by the profit. Our failure to win in the great race was due principally to our lack of knowledge beforehand of the true physiography of the circuit. You see, we Americans were not posted on the many irregularities of the Auvergne, or, rather, the Michelin circuit. Had we sent a representative over to carefully inspect the course beforehand, our cars would have been differently constructed. Our cars were of the 50-horsepower variety, while all the other racers were 90-horsepower machines, and even better, Leon Thery's Richard-Brasier being 96-horsepower. The Pope-Toledo cars were built for high speed and not for hill-climbing. Anyone who has a true knowledge of the physical features of the Michelin circuit knows that, to win over such a course, a car must be a special hill-climbing machine, one especially built for endurance runs as well as for speed. All the other machines were hill-climbers, and therein lay our failure to win with the Pope-Toledo machines.

"The circuit was the rockiest, hilliest, down-hill and up-hill course I have ever seen, and I was more than surprised at the record made by the Frenchman. There was not over 10 miles of the entire course of 85 miles that might be termed good, and this distance was found only in sections, at the most 2 miles in length. Had we had the knowledge of the course beforehand that we now have, I do most emphatically believe the Pope-Toledo cars would have won. With this knowledge before the entries were made, we would have struck the French circuit with a much differently constructed pair of machines."

"RIG THAT RUNS" TO MOVE

St. Louis, Mo., July 29—It has been announced that in the near future the "rig that runs," otherwise the product of the St. Louis Motor Carriage Co., whose present plant is located on North Vandeventer avenue, will be manufactured in Peoria, Ill., Jesse French, Sr., head of the concern, having closed a deal with C. W. Constantine and Theodore J. Miller for the Seiberling property at Peoria Heights, paying cash for the building, its contents and six acres of land. The factory is known as the Seiberling plant and was originally built by Monroe Seiberling, who manufactured rubber goods, bicycles, etc.

Later the plant was used by the rubber company and still later by a carriage concern. It is to the left of the street car line going to the heights and includes a three-story brick building with large basement, the structure being 60 by 260 feet, with a one-story addition to the rear. While the building contains boilers, dynamos, engine, shafting and some machinery, the parts not needed will be stored and supplanted by modern machinery from the St. Louis plant.

Being cramped for room in the St. Louis plant, Mr. French looked elsewhere for a location. Erie, Pa., made a strong bid, as did several other cities, one of them going so far as to offer a bonus of \$60,000. Peoria's shipping facilities were well known to Mr. French, though, and there was also a touch of sentiment in the deal, as Mr. French, 39 years ago, was a student in Cole's Commercial College in Peoria and he felt a desire to renew old associations.

The Peoria plant, it is said, will be equipped with the idea of doubling the capacity of the St. Louis company. It is claimed that two-thirds of the company's orders this year had to be turned down because the cars could not be gotten out in time. Only recently, Mr. French says, \$58,000 worth of orders for immediate shipment was declined because of this, as well as \$200,000 worth of orders for future shipment. The St. Louis plant is said to have been rushed to its fullest capacity and still the cry for "rigs that run" went unsatisfied. At present 150 men are employed, but this number, it is expected, will be increased, for Mr. French is counting on turning out 500 cars for 1906.

SIX SURVIVE RELIABILITY TEST

London, England, July 18—Of the twenty-three starters in the 400-mile reliability run for motor cyclists, which was held July 13 and 14, only six finished the long grind. The competition was for the Muratti trophy, the event starting from Balmoral, Belfast, and being held under the auspices of the Ulster center of the Motor Cycle Union of Ireland. R. M. Brice, riding a Browne 3½-horsepower motor cycle, was adjudged the winner. E. A. Lowe, also of London, scored the same number of points, but as Brice had ridden more closely to the schedule he was awarded the cup. It was not a question of speed, for E. Hulbert of Coventry rode the 400 miles in 7 hours 1 minute 49 seconds, while Brice took 7 hours 2 minutes 41 seconds. L. L. Wilkinson of Belfast, J. P. Barney of Belfast and J. Stewart of Belfast were the other finishers.

NEW MOTOR CYCLE RECORDS

London, England, July 18—C. R. Collier, one of the English team in the recent international motor cycle cup contest over the Dourdan course in France, has succeeded in smashing motor cycle records from 6 miles up to and including the hour. The trial was made at Canning Town, Collier riding a twin-cylinder Matchless and doing 54 miles 523 yards in the hour. His first mile was done in 1 minute 14½ seconds, 5 miles in 5 minutes 40½ seconds, 10 miles in 11 minutes 10½ seconds, 15 miles in 16 minutes 41½ seconds, 20 miles in 22 minutes 9½ seconds, 25 miles in 27 minutes 39 seconds, 30 miles in 33 minutes 8½ seconds, 35 miles in 38 minutes 36½ seconds, 40 miles in 44 minutes 7 seconds, 45 miles in 49 minutes 41½ seconds and 59 miles in 55 minutes 13½ seconds.

LICENSED MAKERS MEET

Decide To Form a Patents Holding Company and Transact Other Important Business

Buffalo, N. Y., July 29—Twenty-seven of the thirty members of the Association of Licensed Automobile Manufacturers were in attendance at the 3-days' meeting, which closed here today. Though the sessions were executive, much interesting information has leaked out.

The report on the work of the mechanical branch of the association, in which the engineers get together to study technical problems and endeavor to improve the general product, was received and in response to a request of the branch an appropriation was made to establish an experimental and testing laboratory to further the work of the designers and builders.

Approval was given to the report of the committee on the subject of a patents holding company and it was arranged that such a concern shall be incorporated as soon as possible, with the object of taking care of all the patent interests of the association, and its members, with the sole exception of the basic Selden patent. The new company will have nothing whatever to do with the Selden patent or the suits now pending under it, which are rapidly nearing completion, according to a report made at the meeting, all of the testimony for the defense being now in and there being now only rebuttal testimony to be taken. The new company will be incorporated under the laws of New York, with the title of Association Patents Holding Co., and will be launched with a substantial capitalization. The incorporators will be Charles Clifton, of the George N. Pierce Co., Buffalo; J. H. Stillwell, of the H. H. Franklin Mfg. Co., Syracuse; E. H. Cutter, of the Knox Automobile Co., Springfield, Mass.; Marcus I. Brock, of the Autocar Co., Ardmore, Pa.; E. R. Thomas, of the E. R. Thomas Motor Co., Buffalo; Elwood Haynes, of the Haynes-Apperson Co., Kokomo, Ind., and James Becker, of the Elmore Mfg. Co., Clyde, O. The committee on the next national show in Madison Square garden reported progress of a satisfactory character.

A report from the committee on agents was approved and the policy will be to enforce the agency clause in the contract of manufacturers, in order to keep them down to the licensed product and prevent attempts to "beat the devil about the bush," by handling unlicensed cars under different company names. There did not seem to be any disposition to make any material changes in the methods of doing business with agents, but the sentiment expressed was in favor of close co-operation between manufacturer and agent and the committee on agents was not discharged, but was continued for the purpose of furthering improved relations.

Chicago, Ill., July 28—The management committee of the American Motor Car Manufacturers' Association met at the offices of the association in the Marquette building here today for the discussion of the New York show situation. Detailed arrangements with reference to the show are being pushed ahead. These arrangements will be acted upon at the next regular meeting in New York on

August 25, at which meeting the members of the association will confer personally with Mr. Butler of the Automobile Club of America concerning the show problem.

Manager McMullen, of the association, reported to the committee the change in Western classification on automobiles recently made by the Western classification committee changing the classification of automobiles that are taken apart and whether crated or boxed, to first-class actual weight, instead of a minimum of 5,000 pounds. Those present at the committee meeting were Roger B. McMullen, general manager, Chicago; James Couzens, of the Ford Motor Co., Detroit; A. C. Newby, of the National Motor Vehicle Co., Indianapolis, and William Mitchell Lewis, of the Mitchell Motor Car Co., Racine.

SPORTSMEN IN MOTOR MATCH

Paris, France, July 19—Two sportsmen are now engaged in a motoring contest that is being watched by England and France. Some time ago Paul Meyan of France challenged any English automobile to compete against his own car, a 24-horsepower De Dietrich, for a sum of 10,000 francs, over a distance of 200 miles a day for a limited period. J. D. Siddeley, on behalf of England took up the challenge with his 18-horsepower Siddeley, the distance, at Meyan's request, being reduced to 4,400 kilometers. The French car had already been driven some 30,000 miles, so the Briton selected the first Siddeley ever built, putting Montague Grahame-White in as driver and Valentine Gill New as observer. The contest started July 12 from Paris, the itinerary extending from 12th to 26th, the daily run being about 320 kilometers. Each competitor can start each morning any time after 5 o'clock and must finish each day at 7 p. m., no restrictions being made as to pace. The daily run is divided into sections of about 50 or 60 kilometers each. The competitors will be controlled in each of the sections, which must be traversed at a minimum average speed of 25 kilometers an hour. The car which fails to arrive at the last control at 7 p. m. will be disqualified and the one that most often fails to maintain the average speed of 25 kilometers an hour loses the match. If the two cars fulfill the conditions of the match equally it will be declared a dead heat and the stakes returned. No repairs are allowed and the cars will be interned each night. At the end of the third day neither car had any advantage.

BRISCOE IS OPTIMISTIC

New York, Aug. 1—Benjamin Briscoe, president of the Maxwell-Briscoe Motor Co., makes the suggestion that the participants in the Glidden tour present some sort of a personal testimonial to the donor of the cup in appreciation of his generosity in giving the trophy and his impartial management of the contest. In making it Mr. Briscoe says: "We, who are in intimate daily contact with the automobile, believe that it has taken a place in American life which will eventuate in its becoming the almost universal vehicle. We can easily look ahead to a point where all kinds of local transportation, passenger and freight, will be affected by the use of a motor car. The general public, busy in their various interests, will, of course, come more slowly to the realization of the fact, and must be given signal object lessons occasionally to have demonstrated to them to what

THE REALM OF THE COMMERCIAL CAR



BREWERY TRUCKS IN ST. LOUIS

"Pushing or moving railroad cars with automobiles is not permitted." This is part of the notice to drivers to be found in the automobile shed of the Anheuser-Busch Brewery Association at St. Louis, Mo. As one might naturally deduce, the automobiles are of a large and powerful variety and that furthermore there are a number of them, on account of the generality of the work. In fact, the sight at "the shed," every morning before 7 o'clock is something to gladden the heart of any exponent of the commercial motor vehicle who might stroll in at that time. He would look down a vista, formed by motor trucks, nearly a block long.

There are in all thirty electric vehicles in this building, sixteen of which are 5-ton trucks. There are eight 3-ton trucks, a barrel wagon and several quick delivery cars. The 5-ton trucks can maintain a speed of 6 miles per hour and the 3-ton vehicles make 12 miles per hour on level roads.

The automobile shed occupies one end of a city block and is provided with a large workshop and a pit for making adjustments and running repairs. The machine shop, of the brewery, provides large facilities for repairs and there the cars are built, or put together, at about one-third less than the selling price of the manufacturers. This work is done by the brewery engineers—Rubel, Schwedtman, Wells. The direct current for charging is provided by the electric power plant of the brewery. There are seven plugs on each side of the shed so that the charging facilities are ample.

Each truck driver is carefully selected and carefully trained for his work and knows a great deal more about his car than does the average trolley motorman. The drivers are governed by strict rules, as to operating the cars. In addition to the rather startling regulation regarding moving railway cars the following are posted in a conspicuous place:

No driver shall over-load his truck without special order.

Drivers running down grade shall not go any faster than the speed of the machine when on the level.

All drivers required not to stop with load going up grade.

Besides the driver, there is a helper who only rides and assists in loading and unloading. He has positive orders to keep his hands off the operating mechanism and is not allowed even to release or put on the brakes. This, of course, keeps the responsibility in one place.

The full load for the 5-ton vehicles is 185 cases of beer, each case holding two dozen bottles. The 3-ton trucks carry about 100 cases, when loaded inside and on top. The day's jaunt of the wagons is so arranged that they will all come back loaded with empties, covering long distances and doing an amount of work that two horse-trucks of the same capacity could not accomplish in the same day. The trucks are so numerous, that one at least can always be found in the business district, or up-town in the west end, without much searching. They are handsome with their shining brass and blue paint, so that they are better advertisements than all the bill and sign boards put together.

As far as the amount of work the cars are doing there is perfect satisfaction. The old malady, of tires, gives no end of trouble. The tires used at first never lasted longer than a month and the present equipment does but little better over the rough and rugged streets of South St. Louis.

One morning shortly after 6 o'clock, a MOTOR AGE man went to the automobile shed and after inspecting the equipment climbed up beside the driver on a big 5-ton truck. The truck went first to the city department, where it was driven close to the loading platform



without switching or backing and where it occupied only half as much space as the horse-drawn trucks. At 8 o'clock it pulled out of the city department, loaded with 125 cases, which the driver called a light load. It was but 8 o'clock in the morning, but it stopped at the beer-hall of the brewery, where every driver drinks two beers and gets ten tickets, good at the brewery, before starting out for his day's run.

Leaving the brewery at 8:10 the route was north on Broadway to Hickory street, passing all horse-drawn trucks within a block after sighting them. The truck seemed to be going twice as fast as the people walking on the sidewalk. The street was paved with cobblestones that were uneven and it jolted over them in a way that seemed as if it would shake it to pieces, but it was the usual going and the 5-tonner didn't seem to mind.

At Hickory the route turned west to Ninth street, making a 2-minute stop at 8:30. At Eighth and Hickory eight cases were delivered and the truck left again at 8:50. Going north to Market the course turned east to Sixth street to avoid a torn-up crossing that a horse might have pulled through. North on Sixth street to Walnut, over the asphalt to Walnut sailed the truck. The driver turned up Walnut to Seventh street and across Seventh to a blind alley, between Locust and St. Charles streets, arriving at 9 o'clock.

In this blind alley the truck demonstrated its usefulness as nowhere else. It was driven in the alleyway, head-first, with not 1 foot to spare on either side. It was stopped at just the right spot so that the cases of beer could be lifted from the truck and into the door of the saloon. One of the illustrations shows the closeness of the work. When the beer had been delivered and the empties put aboard, the big truck was backed out of the alley-way without the slightest difficulty. It would have been difficult to back a team of horses out of the place at all. The whole operation, without hurry, including signing the tickets and a few details, occupied only 12 minutes.

The next stop was at Fourth street and Lucas avenue where thirty-five cases were deposited on the side-walk. Leaving Fourth and Lucas at 10 o'clock the truck went north to 2700 and then turned south to Laclede avenue, where a stop was made at 10:30. This point could not have been reached in less than half that time on the trolley car. While driving along to this point, a huckster's wagon was met, whose horse was frightened by the singing of the motor and ran into the curb. The



UNLOADING ON THE SIDEWALK

driver slowed down when he saw the horse's distress and steered for the opposite side of the street, as drivers are cautioned to do.

"Some of these plugs never will get used to us," he said, and the helper jumped off the back end of the truck and went to the assistance of the huckster. When it was all over, and the helper had crawled on again, he said nothing and both he and the driver seemed to have already forgotten the incident.

After a 20-minute stop at Twenty-seventh and Laclede the operator drove to 3200 Laclede in a few minutes, where a few cases were delivered. Then turning south on Leonard avenue, the route was over some rough road to Manchester avenue where twenty-five cases were delivered. From Manchester avenue, another long run was made to 3200 Olive street, where the truck was driven so close to the curb that the wheels touched it and all this without backing or any difficulty whatsoever. After a large delivery at this point it was nearly noon and the MOTOR AGE man left the boys, thoroughly convinced of the very superior power of the big electric.

Two years ago the Anheuser-Busch company purchased one 5-ton truck, and then another. These two trucks were so efficient and made such a splendid appearance in the business district and elsewhere that the brewery people went into the game deeper until the present equipment was obtained. The streets of St. Louis are hilly and more often rough than smooth. The brewery is located at Ninth and Pestalozzi streets, in what is known as South St. Louis, which is about $2\frac{1}{2}$ miles from the central business district. The location of the brewery and the rough streets do not tend to ideal conditions under which to operate electric trucks.

The conditions of repair, charging and equipment are so different in the case of the Anheuser-Busch trucks that it is practically impossible to get the figures of the relative cost of operating these trucks and the horse-drawn trucks. As may well be imagined the wages of the drivers and mechanics amounts to a considerable sum and the wear and tear on the tires of thirty trucks is another large item. But if the expense of operating motor-trucks in this case is higher than the horse-drawn vehicles, the account is balanced by the advertising received. Since a year and a half ago the equipment has been increased from two to thirty electric vehicles, against over a hundred horse-drawn wagons.

NEW PITTSBURG CONCERN

The Pittsburg Motor Vehicle Co. is the latest automobile concern to apply for a Pennsylvania charter. Its members are Thomas B. Pfarr, Jr., John R. Rush and Robert B. Ward, and its capital is \$200,000, which is well placed among reliable business man. A little over a year ago the Shadyside Motor Vehicle Co., went into the business of manufacturing trucks for commercial use. This company has been absorbed by the new one, which will use the Shadyside plant for the present. Later it is proposed to erect a big plant in another district. The Pittsburg company will manufacture motor delivery cars with a capacity up to 4,000 pounds and the trucks will be designed for all classes of general city work. The incorporators are men of considerable experience in automobile manufacture and are satisfied from the present outlook that there will be a steadily increasing call for their cars next year. Several large



CLOSE WORK IN BLIND ALLEY

business firms have lately ordered motor delivery cars, the last one being the Adams Express Co. of that city.

RELATIVE DELIVERY WORK

The relative cost of delivering merchandise by a motor truck can be studied with considerable accuracy from the demonstration performances of the Packard trucks being used for demonstration work in Chicago, Detroit, Buffalo and other cities. The Packard Motor Car Co. provides the drivers with blank forms in which is filled the daily performances of the truck. This form, when filled in, shows the number of trips made each day, the exact miles traveled according to cyclometer measure, the gasoline and oil consumed, loads carried, deliveries made, miles per hour traveled, time consumed by stops and number of stops made, as well as the nature of streets traveled over.

A careful review of these forms for demonstrations made for the Quaker Biscuit Co., of Chicago, on June 1 and 2; for the Detroit White Lead Works of Detroit on February 25; for the Keystone Transfer Co., of Buffalo, on May 22; for the Stroh Brewing Co., of Detroit, on March 16; for the Edison Illuminating Co., of Detroit, on February 25; for the Standard Oil Co., of Detroit, on June 1; for the Commercial Milling Co., of Detroit, on May 3, and for the Goebel Brewing Co., of Detroit, on June 2, reveals some interesting facts. These demonstrations were made in different months, when streets were in entirely

different conditions and in different cities where hills and variable surfaces were encountered.

In these demonstrations thirty-four trips were made, 96,237 pounds of merchandise delivered and $331\frac{3}{8}$ miles traveled in making the deliveries. In all 29 hours 33 minutes were consumed in actual traveling by the truck, showing, that while traveling with its load a speed of $11\frac{1}{4}$ miles per hour was maintained. For this work $32\frac{3}{4}$ gallons of gasoline were needed, or in other words the truck averaged $10\frac{1}{2}$ miles on each gallon of gasoline. In making these trips 269 stops were made. The cost of gasoline and lubricating oil amounted to \$3.64.

Those figures show that, 269 stops being made at a cost of \$3.64, makes each stop or delivery an expense of 1 3-10 cents. The cost per mile for delivering amounted to 1-100 cents, the cost for delivering each pound of merchandise was .0037 cents, the cost per ton 8 cents and the cost of the truck per hour when delivering $12\frac{1}{4}$ cents. The loads carried during these trips were of the following weights: Pounds—2,700, 3,500, 2,500, 2,100, 3,000, 2,900, 600, 2,300, 600, 1,600, 4,300, 4,300, 3,800, 4,300, 4,300, 3,200, 3,200, 3,200, 2,237, 2,400, 2,600, 3,300, 3,200, 3,300, 2,700, 2,800, 4,000, 2,500, 3,300, 3,300, 2,100, 4,500 and 1,800.

The Thomas Roberts Stevenson Co., of Philadelphia, a large stove manufacturing concern, on Friday last made an exhaustive test of the Packard truck, with a view of comparing the economy of the motor truck with the company's horse-drawn vehicles. Roxborough, a very hilly suburb of the Quaker City, was selected for the trial, which consumed 6 hours 59 minutes, the vehicle covering $43\frac{1}{2}$ miles—an average of 10.43 miles an hour while running. During the test fourteen actual deliveries of gas ranges were made, and the company's officials stated the next day that the actual work accomplished slightly exceeds that done by three two-horse teams in the same time. Some of the streets covered by the truck showed grades in excess of 25 per cent.

AN ELECTRIC DELIVERY WAGON

The advantages of advertising by the use of an electric delivery wagon is well looked after by J. George Smith, confectioner, of St. Paul, Minn., who for over 5 years has constantly used electric vehicles built by the Pope Motor Car Co., of Indianapolis, Ind. The exterior design of the machine is not



UNLOADING FROM TRUCK INTO SALOON DOOR

different from the ordinary electric delivery, but the feature of them as advertisers consist in the use of 150 incandescent lights forming the word "Smith" on the front of the dash. The machines, being used in the catering line, have an abundance of night orders and unlike other night delivery wagons, that pass as dark shadows, are moving objects covered with light so that the least observant on the sidewalks must take note of them. The electric sign on the dash is only a part of the lighting effect. On the top of the sides of the box are reflectors, concealed beneath each of which are numerous small electric lights that throw their glow over the entire sides of the vehicle disclosing the name of the concern as well as other decorations.

The motor equipment is a single motor carried on the rear axle with double reduction gears to the road wheels. Beneath the front and rear wheels is carried thirty cells of Exide battery of 11 P. V. size. The control of the wagon rests with three brakes, two of which, the armature shaft brake and double hub brake, are operated by foot and the third, an electric brake is applied by pulling back the controller handle. The 30-inch artillery wheels are shod with pneumatic tires 30 by 3-inch sizes on the rear and 30 by 3½ on the front. The carrying space of the wagons is 3 feet 4 inches long, 2 feet 9 inches wide and 4 feet 7 inches high, there being space for carrying 300 pounds of merchandise.

KNOX-PACKARD GLIDDEN TOUR

The performance of the Packard and Knox trucks in the Glidden tour aroused widespread interest among motorists in general. The wagons were official entries in the tour and carried trunks and suit cases of the tourists, together with photographers' supplies, other touring requisites and supplies of gasoline and lubricating oil. The accompanying table shows the daily performance of the two vehicles, showing the time of departure of each, each morning of the tour as well as the time of arrival at the night stop. The amount of gasoline used, amount of lubricating oil and total time, from start in the morning until arrival at night, are given. It is impossible to give the load carried by each wagon on each trip and so a valuable point



A WAVERLEY CANDY WAGON

of comparison between the performance of the two wagons is lost. The distances given between the different night stops are taken from the official program and in a few cases do not tally with the cyclometer readings on each of the trucks, both in instances having traveled 10, and in one case 15, miles further than the distances shown on the official cards. The actual running time of the machines cannot be given. A few examples go to show that actual running time of each truck was much less than the elapsed time. On July 19, in the trip from Bretton Woods to Concord, the Packard truck lost 5 hours in getting out of a deep ditch that it had skidded into because of a frightened horse. Trees had to be cut down and a trestle made to extricate the machine. On the same day the elapsed running time of the Knox truck is given as 13 hours 7 minutes, whereas the actual running time on that day was 10 hours. On July 14 in the run from New Castle to Bretton Woods the Packard truck was delayed 2½ hours in one place by taking the wrong road, 2 hours in another place when assisting touring cars over bad roads and 1 hour for breakfast.

From the table it will be noted that the Packard truck consumed 79 gallons of gasoline, at 20 cents per gallon, the price along the route of tour, and 2½ gallons of lubricating oil at 50 cents per gallon, making a total of \$16.92½ for fuel for the trip or not

quite 2 cents per mile, to be exact 1.95 cents per mile. The Knox truck consumed 99½ gallons of gasoline and 4 gallons of lubricating oil, making a total expense of \$21.90, or 2½ cents per mile. The replacements on each of the trucks due to accidents or defects in material, were practically nothing, being a few chain links in each case.

The Knox truck was fitted with a two-cylinder air-cooled motor with cylinders with 5-inch bore and 7-inch stroke 16 horsepower. The road wheels were 32 inches in diameter and fitted with solid rubber tires. The weight of the truck was 2,000 pounds. The Packard truck has a 14-horsepower water cooled motor, consisting of two 4 1-16 by 5½-inch cylinders. Both trucks are intended for 2,500 to 3,000 pound loads. A leading feature in connection with the performances of these trucks is that solid tires were used and that the trucks traveled at averages of 14 miles per hour.

COMMERCIAL STEPPING STONES

The electric sight-seeing vehicles around Niagara Falls are doing a landoffice business, the horse observation wagons being quite forsaken at times.

The National Lead Co., 1510 State street, Chicago, Ill., has purchased a Packard truck, which has been delivered. It is fitted with a special canopy top for delivery work.

The different government departments in New York city are now using twenty-one automobiles in looking after governmental work. In Chicago only four such machines are used.

Between Trinity Center and Delta, Cal., an automobile bus line is in service. The vehicles are primarily intended for passenger service but carry mail, baggage, express and freight.

At its fifth monthly meeting the West Indies Transportation Co., of Cuba, declared a 3 per cent dividend for the month. It will soon be time for a few other companies to be declaring similar dividends.

An automobile line has been organized at Seattle, Wash., to operate motor passenger wagons between Nome and Salmon City, Alaska, a distance of 35 miles. The fare between the points will be \$15.

England has fast motor trucks. A few weeks ago a gasoline truck was traveling through the country with 2 tons of furniture at a greater speed than 20 miles an hour. The feature of the performance is that the truck was shod with steel tires.

The Ivel, a Scottish commercial vehicle specially intended for agricultural uses, has figured in a new role recently, being used for cultivating hop fields and also serving to spray the vines, the power of the gasoline motor being used to spray the liquid.

Hospital boards in New York city are discussing the purchase of motor vehicles for ambulance work. One hospital with numerous branches throughout the city is advocating electric machines, but several of the others are in favor of the use of gasoline machines.

Here is what the commercial vehicles are up against. In Chicago recently a manufacturer made a successful 4-day demonstration with his truck. The senior member of the firm was abroad at the time, but his son, operating the business in his absence, secured the demonstration and wrote his father to order the truck. The father, deaf to the good truck, replied in the negative, as he never had had any confidence in horseless vehicles. Condemning without seeing is a common error with many people.

DATE	PACKARD TRIP	DISTANCE MILES	LEAVE	ARRIVE	HOURS ON ROAD	GASO-LINE GALS.	OIL QTS.
July 11	New York to Hartford	121½	2:00 a. m.	10:32 a. m.	8:32	11	1½
" 12	Hartford to Boston	122½	2:00 "	11:13 "	9:13	11	1½
" 13	Boston to Newcastle	63	6:00 "	11:00 "	5:00	5½	¾
" 14	Newcastle to Bretton Woods	108	1:30 "	9:15 p. m.	19:45	9½	1
" 19	Bretton Woods to Concord	103	2:00 "	9:10 "	19:00	10	1½
" 20	Concord to Worcester	99	5:30 "	2:30 "	9:00	9	1
" 21	Worcester to Lenox	100	5:45 "	4:15 "	10:30	9½	1
" 22	Lenox to New York	149½	5:00 "	9:15 "	16:15	14	1½
					97:15	79	9

DATE	KNOX TRIP	DISTANCE MILES	LEAVE	ARRIVE	HOURS ON ROAD	GASO-LINE GALS.	OIL QTS.
July 11	New York to Hartford	121½	7:15 a. m.	4:15 p. m.	9:00	14½	2
" 12	Hartford to Boston	122½	6:00 "	3:15 "	9:15	12	2
" 13	Boston to Newcastle	63	6:40 "	11:40 a. m.	5:00	8	1
" 14	Newcastle to Bretton Woods	108	6:00 "	5:20 p. m.	11:20	15	2½
" 19	Bretton Woods to Concord	113	6:08 "	7:15 "	13:07	15	2
" 20	Concord to Worcester	99	6:02 "	3:10 "	9:08	10	1½
" 21	Worcester to Lenox	100	6:12 "	3:15 "	9:3	10	2
" 22	Lenox to New York	149½	7:00 "	9:30 "	14:30	15	3
					80:23	99½	16

AMONG MAKERS AND DEALERS



Dayton Man Quits—Scott McDonald, agent for the Marion, Mitchell and Maxwell cars, in Dayton, O., has given up the business.

Closes Garage in Dayton—The Dayton Auto and Rubber Co. has closed up shop. It handled the Imperial cars and did repair work. This makes three garages out of business in Dayton.

Wayne Agents Named—Announcement is made by the Wayne Automobile Co., of the appointment of the following agents: E. H. Peshak & Co., Sun Prairie, Wis.; Wegman Piano Co., Auburn, N. Y., in charge of Henry Wegman; M. R. Brown, Passaic, N. J.; H. F. Tyler, Junction City, Kan.

Job for Jimmy Joyce—James Joyce, who resigned as sales manager of the Electric Vehicle Co., will take charge of the American end of the business of Captain A. Bianchi of Nice, France, the European-Continental representative for Columbia automobiles. Joyce's headquarters for the present will be in Hartford.

Moves Into Motor Plant—Arrangements have been made by the Colonial Brass Co., of Cleveland, makers of air compressors and articles pertaining to liquid dispensing apparatus, to move into the plant of the Geneva Automobile Co., of Geneva, O., which it purchased recently. The plant is reported to be worth \$71,000. The Colonial company will build a brass foundry at Geneva in connection with its other business.

Already Crowded—Accommodations for automobiles at the new Bellevue-Stratford hotel, in Philadelphia, having already proved inadequate, despite the recent completion of the hotel's garage, a permit was recently taken out by Builder D. L. Norris, for a three-story automobile storage house at 1405 Locust street, south of and adjoining the hotel. The structure, which is designed for the storage of cars belonging to guests, will cost \$7,000.

Threatens to Move Plant—Walter S. Austin of the Austin Automobile Mfg. Co., of Grand Rapids, Mich., claims that he is being persecuted by the police authorities of the town, who have yanked him up several times for alleged violation of the speed law. Austin denied the searching and claims that he should be allowed some leeway while he is demonstrating on the streets. He says if there isn't a let-up he will take his factory to another city, thus costing Grand Rapids an industry that employs 150 men.

Phoenix Makers Incorporate—The Stover Automobile Co., of Freeport, Ill., has taken out its incorporation papers, the capital stock of the company being placed at \$50,000. It is intended, however, to increase this as soon as the business warrants. D. C. Stover is named as president, W. A. Hance as vice president, P. S. Stover as secretary, J. F. Smith as treasurer. The stockholders are D. C. Stover, P. S. Stover, Fred Dorman, W. A. Hance, F. Schreyer, J. F. Smith, A. E. Hanke, J. P. Stover, Mrs. F. S. Winger and Jacob Weiss. A board of nine directors will control the operations of the company. A. E. Hanke

will be superintendent and P. F. Schreyer assistant. The leading feature of the car will be the use of alcohol instead of gasoline as a fuel.

Bob Sold Out—Bob Garden, of the Quaker City Automobile Co., last week disposed of the last 30-horsepower Pope-Toledo of the company's 1905 consignment. Bob says there will be nothing further doing in the P.T. line in Philadelphia this summer.

Plans \$60,000 Garage—Plans are being made by the Island Realty Co., for the erection of a four-story garage 87.3 by 26.7 feet, on the northeast corner of Broadway and Sixty-second street, New York. Architect J. H. Morgan estimates that the cost will be \$60,000.

Pope-Toledo for Commission—Twelve Pope-Toledo touring cars have been ordered by Secretary of War Elihu Root to handle the Russian-Japanese peace commission during the session at Portsmouth, N. H. The order was sent subject to President Roosevelt's approval, but the automobile makers took this for granted and started work obeying the command.

Moline Stands Test—Messrs. Hipp and Hall of the Hipp, Reitz & Hall Automobile Co., of Cleveland, O., are charged with being native-born Missourians, for they wanted to be shown and they were shown. They were anxious to find out if the Moline car would stand a road test, so they drove from the Ohio metropolis in their demonstrating car to the factory in East Moline, Ill. There they secured a new machine which they intended delivering to a customer. Each in a car, the



RECENT INCORPORATIONS

Detroit, Mich.—City Machine Co., capital \$50,000, of which \$35,000 is preferred; to manufacture and sell automobiles and supplies; stockholders, Myron E. Benjamin, Lewis W. Raulet, George S. Benjamin, Frederick J. Nicholson, Alonzo L. Johnston, Franklin O. Prussia, Andrew W. Smith and M. E. Benjamin, trustee.

Wausau, Wis.—E. W. Abrogast Motor Co., capital \$10,000; incorporators, E. W. Abrogast, Robert Klickbusch and J. H. Riesen.

St. Louis, Mo.—Union Automobile Co., capital \$15,000, full paid; incorporators, Dwight H. Hubert, M. T. Bender and James Underwood.

Freeport, Ill.—Stover Automobile Co., capital \$50,000; to manufacture machinery; incorporators, Jacob Weiss, J. F. Smith and D. C. Stover.

St. Louis, Mo.—Olive Automobile Co., capital \$15,000, all paid; incorporators William Lingenbrink, Frederick H. Krebsman, Paul A. Forbes, Victor W. Lingenbrink and Josephine McCann.

Chicago, Ill.—Wayne Automobile Co., capital \$5,000; manufacturing; incorporators, F. W. Cornish, Charles Friedberg and L. W. Friedberg.

St. Louis, Mo.—Van Automobile Co., capital \$2,000; incorporators, William S. Levy, Ambrose Van Antwerp, Herman L. Schnure and Isaac Gradowohl.

two Clevelanders made the return journey without incident. The distance was 640 miles each way, making a total of 1,280.

Only Racing for Kiser—Earl Kiser is expected to make a change in his business and devote his time to racing and the Bullet II.

Finishes 1905 Work—The Dayton Motor Car Co. is reported to be laying off men every week, as the output for 1905 is finished. The 1906 models are being perfected. The company will close 2 weeks in August.

Jaynes Company Incorporates—The Jaynes Automobile Co., of Buffalo, has been incorporated with a capital of \$100,000, the directors being W. C. Jaynes, of Buffalo; F. I. Alliger, of Tonawanda and C. B. Birney, of North Tonawanda. Mr. Jaynes is president of the National Association of Automobile Dealers, recently organized.

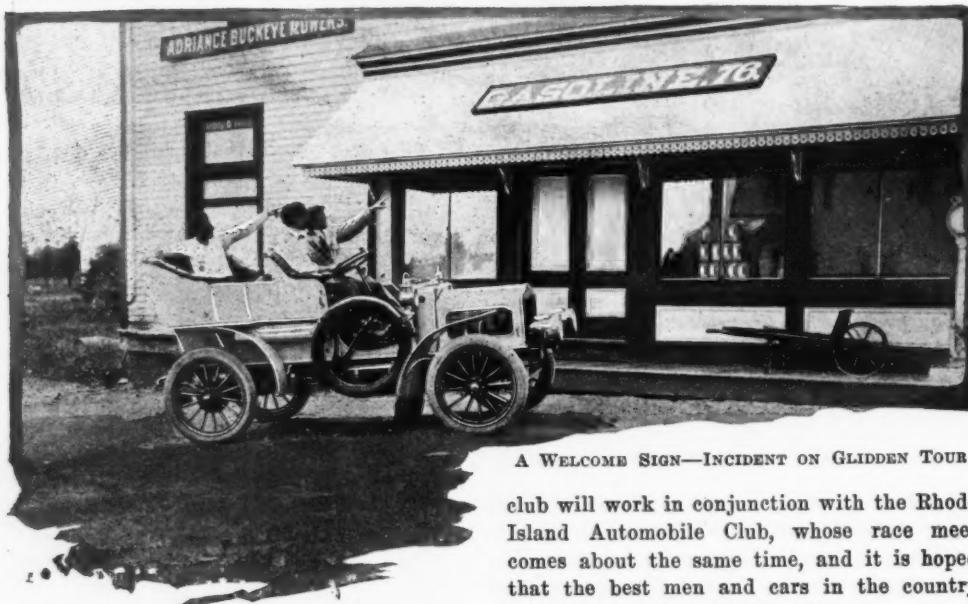
Banker Enlarging—The Banker Bros. Co., of Pittsburgh, Pa., has plans for an addition to its present building, to be completed this fall, 80 by 115 feet and two stories high. It will adjoin the present building, which is 100 by 115 feet and two stories. When completed the entire building will be 180 by 115 feet and two stories, 180 feet frontage on each Baum and Commercial streets.

Push Hub's Motodrome—The Harry Fosdick Co., of Boston is getting ready to launch its new business. At the present time work is being completed on the Motodrome of this company on Stanhope street, and as soon as the heads of the new firm return there will be something doing. Mr. Fosdick is spending a month or so at his country home in Belgrade, while Mr. Dowling is touring abroad for a few weeks.

Spokane Speaks Up—Spokane is on the automobile map, placed there through the fact that 100 automobiles are owned in the far western city. It has a thriving motor club and at least four prominent stores. The Spokane Garage Co. is managed by J. F. Brod, who handles the Ford. He has sold seven of them this summer. The A. S. Tyler Automobile Co. handles the Winton and Cadillac. Adelbert Stillson is retailer of the Franklin, while the Columbia garage looks after the Oldsmobile, Columbia, Pope-Toledo and the Pierce Arrow.

Kirk Out of Harness—Ezra E. Kirk, who lately withdrew from the Consolidated Mfg. Co., of Toledo, is not expected to remain out of the automobile business long. For a time he will devote his energies to his private business affairs and the management of the Kirk estate, but those who know him will not be surprised if he gets back into the game again. Mr. Kirk is given credit for the inauguration of several changes in the personnel of the staff of the Consolidated company which is expected to prove of unusual strength to the automobile department during the coming year. Mr. Kirk's withdrawal came at the time the company was reorganized with an increased capitalization and when plans were completed in detail for the enlargement of the plant and a general impetus given to the business.

FROM THE FOUR WINDS



A WELCOME SIGN—INCIDENT ON GLIDDEN TOUR

club will work in conjunction with the Rhode Island Automobile Club, whose race meet comes about the same time, and it is hoped that the best men and cars in the country will be secured for both events.

Celebrities in a Car—It isn't often that two celebrities like Senator W. B. Allison of Iowa, and D. B. Henderson, ex-speaker of the house of representatives, can be cornered in one automobile and photographed. Yet the Adams Co., builder of the Adams-Farwell car, has been furnished with a picture of the two great national politicians taken at Dubuque, which is the home town of both Allison and Henderson.

Take Leisurely Tour—Leisurely touring across the country from New York to San Francisco, Mrs. L. F. Largey of New York, Miss Montana Largey of Butte, Mont., John Catron of Santa Fe, N. M., and Mr. and Mrs. Frank McGinn of Omaha, are now resting in Omaha. The party is traveling in a Winton and a White steamer. New York was left on June 10. A stop was made in Chicago, from which tourists started on July 13.

New Route Finder—Members of Wisconsin automobile clubs are back of a movement which they think will prove a reliable route finder. An Oshkosh man thought it up, his idea being to have the Wisconsin Telephone Co. paint strips of color on its poles along the road and then have printed a key that will explain the significance of the colors. For instance, strips of red and white on the pole, —within easy eye range, would indicate that

following the road having these colors upon the poles would take the tourist from Oshkosh to Milwaukee. Branch roads to different points could have the poles painted with other combinations, so that by looking at the key the tourist could quickly tell where to go and how to go to any familiar town or city.

Club in Alabama—Starting with fifteen members the Montgomery Automobile Club of Montgomery, Ala., is now running on a temporary basis. A permanent organization is expected soon. The temporary officers are: The Rev. Neal L. Anderson, chairman; Dr. F. C. Stevenson, vice chairman; Percy F. Black, secretary.

Major Miller Going Abroad—Major C. J. S. Miller, of Franklin, Pa., will shortly sail for France, accompanied by Mrs. Miller. They will be joined by Attorney James Francis Burke, who is a delegate to the peace congress in Paris, and Mrs. Burke. Major Miller will take his 45-horsepower Fiat car and tour the continent.

Japs Celebrate Victory—Japan's naval victory over Russia at Tsushima straits was made the occasion for a demonstration at Osaka. The automobile played an important part in the street parade. The Okada brothers were distinctly in the limelight with their Ford car and they sent a photograph of the rig to the Ford Motor Co., at Detroit.

Going to Twin Cities—Even if St. Paul only succeeded in coaxing a mere handful of Chicagoans to make the tour to the carnival recently held in the Minnesota city, the affair was a good ad for the place, as is proven by the fact that the Duluth Automobile Club is planning a tour to the Twin Cities the early part of the month. The distance is 170 miles and the club men plan leaving Saturday. Of the thirty-five cars Duluth boasts it is expected that at least twenty will go on the trip. A. C. Ribenack, L. R. Martin and W. J. Stevenson are in charge of the run.

Novel Rules for Race—Rules governing the automobile race into Port Huron, Mich., where the annual convention of the American Road Makers will be held on August 29, 30 and 31, have been changed by State Highway Commissioner Horatio S. Earle. The judges will decide the winner on a percentage basis. The contestant must come all the way under his own power, must not have violated any speed ordinance or law, must not have caused any horse to run away en route, and must not have collided with or run over any man or beast upon the way. The judges will take into consideration the make and type of car, the age and experience of the contestant, the size of the car, the horsepower of the engine and also its type.

New Role for Barney—Determined to keep in the limelight despite the efforts of Kiser and Chevrolet to shove him into the background with only a "Your carriage awaits, me lad" part in the great motor racing drama, Barney Oldfield has determined to go on the real stage where he is sure of beating Earl Kiser in every race they meet—on the stage. This is King Barney's idea, via grapevine telegraph from Toledo: First he will have a race between himself and Kiser photographed, then put the films in a moving-picture machine. Thus equipped he will go on the vaudeville stage. In the Green Dragon he will take his stand in front of the screen, upon which will be thrown the photographed race. The Dragon, chained to the floor, will

Drill for Soldiers—Italy has an automobile corps in connection with its army and the soldiers are put through a course of sprouts by competent instructors, who teach them how to operate a car. There is also an inspection of the corps every so often.

Passing of Phaeton—Park commissioners at Detroit have sidetracked the ancient and decrepit park phaetons at Belle Isle and in place of the antiquated service the Huber Auto Co. has been allowed to install automobiles, which delight most of the pleasure seekers. As the modern locomotion costs 25 cents per ride and the old way only 10 cents, naturally those who are termed pikers by the more luxurious ones are raising a holler to the park commissioners, who refuse to heed their cries.

To Run Boat Carnival—Hugh S. Gabel is back of a plan to organize a motor boat club in New York and has issued a call for a meeting at Hotel Manhattan, when an attempt will be made to start a power boat club which will manage the national motor boat carnival which will be held on the Hudson river September 14, 15 and 16, when there will be contests for three perpetual challenge trophies—one known as the international trophy, emblematic of the world's championship; the national trophy for the American championship and an interstate championship trophy. The carnival was originally planned for Labor day, but as it interfered with the Thousand Islands' tournament the date was changed.

Takes Up Race Sanction—The Massachusetts Automobile Club has decided that it will not enter the race promoting field this season and has therefore surrendered its claim to the sanction awarded to it for Labor day, the request for which came so dangerously near causing considerable trouble between the two Boston organizations in the early spring. Being officially informed of this fact, the Bay State Automobile Association secured the transfer of the sanction, and will hold the meet on Labor day. There is no question as to the ability of this latter association to handle matters in the best manner possible, as demonstrated by its work on Memorial day, when in the face of strong opposition it carried through one of the best race meets seen in that section. The local



puff and snort on the treadmill arrangement, and Barney and the photographed Kiser will see-saw back and forth until at the proper moment Barney will advance his spark, open his throttle and the hated rival will be beaten by a wheel.

Ban on Motor Cycle—Motor cyclists residing in Livermore, Cal., have had a crimp put in them by the ordinance just passed by the town trustees, who have made it a misdemeanor to use motive power to run a two-wheeled vehicle within the corporate limits. This practically renders the machines useless, for the motor cyclists either have to walk or pedal their machines while in town. The trustees also put a 10-mile speed limit on the automobiles.

College Boys Tour—Amherst college boys have just completed a 2,000-mile automobile tour from Amherst, Mass., to Davenport, Ia., the route running from Amherst to Westerly, Providence, along Long Island sound to New York, up the Hudson river valley, the Mohawk valley and along the Lake Shore Railroad to Chicago. Edward C. Crockett, of Davenport, with his classmate, G. B. Utterly, of Westerly, R. I., a son of Governor Utter of that state, made the trip, accompanied by E. M. Collamore, of Providence, an engineer.

Clubman's Model Garage—Members of eastern automobile clubs are interested in the private garages being built on Long Island. Walter L. Suydam, at Blue Point, on the Great South Bay, has just finished a garage which is unique from the fact that not a particle of wood enters into its construction and in that its doors open automatically as a car passes in or out. The walls, roof and floor are of brick and cement, the doors are of iron and the windows iron and wire glass. Weights released as the car passes under a cord open the doors.

Cruise of Napier Major—Napier Major, a 45-foot yacht motor boat of 9 foot 6 inch beam and 9 tons register, driven by a 24-horsepower Napier marine engine, has just completed a cruise from London to Lerwick in the Orkney Islands and back, a distance of 2,125 miles, during which 450 gallons of gasoline were consumed. Rough weather was experienced, but the object of the trip was accomplished, it being the purpose to demonstrate to the owners of English fishing smacks on the east coast the advantage of equipping their vessels with motors in order to compete with the steam trawlers. It is said that the engine was practically untouched on the trip, except that four ignition plugs and one exhaust valve were changed. Other valves were ground.

Postal Officials Investigate—Postal authorities in Brooklyn are reported to be investigating the firm of Damond & Thomas, 4 Court square, Brooklyn, and the delivery of all mail matter to the firm has been stopped. The inquiry into the business methods of Damond & Thomas was started because of an advertisement running in eastern newspapers offering "an automobile, \$10 down, \$5 a month." The car is advertised as a "gasoline motor automobile of 5-horsepower, with wheel steering gear, artillery wheels, cushion tires and nickel plated trimmings." The full price asked was \$300. "Machines are shipped, already assembled, and in perfect running order," the ad says. "All that is necessary on receiving the machine at the freight station is to remove the box, fill the tank with gasoline, and follow the printed instructions



INSTRUCTING ITALIAN SOLDIERS IN MOTORING

in the glass covered frame on inside of front dash board, and the automobile can be started at once." The postal authorities claim that complaints have been received from several New Englanders who sent their \$10 first payments and have not yet received their automobiles.

Britons in Hill Climb—Not a single breakdown was recorded in the East Dean hill climb, near Eastbourne, England. Events for three classes, promoted by the Sussex County Automobile Club, were held. The course was a 1-mile incline and vehicles were timed from a standing start with a flying finish. M. F. Mieville, in a 6-horsepower Peugeot, took the event for class A in 6 minutes 30 $\frac{1}{2}$ seconds. H. G. Hall's 15-horsepower Darracq won in class B in 3 minutes 53 $\frac{1}{2}$ seconds, while class C went to G. H. Warne, in a 28-horsepower Daimler, in 3 minutes 55 $\frac{1}{2}$ seconds.

Looking for Easy Money—Philadelphia papers admitted that it gave them pleasure to record the following action of an automobilist on the Atlantic City road last Saturday: N. M. Powell, of Brooklyn, N. Y., while bound shoreward in his Autocar, encountered a son of sunny Italy, Nunzio Pagano by name, in a one-horsepower buckboard. As a result of the encounter Nunzio's equine motor tried to separate itself from the vehicle to which it was hitched. The buckboard hung on, but Nunzio was spilled into the highway with a sprained ankle and a bruised visage. Mr. Powell, of Brooklyn, not only tenderly gathered up the dismantled Nunzio and took him to his home in the automobile, but called a doctor, paid his bill in advance and gave the victim 25 simoleons as an as-

suage. It is feared that Nunzio may be on the pike again next Saturday hoping for a repetition of the apparently enjoyed incident.

Dixie Shows Speed—That the Dixie, if she tries for the Harmsworth cup, will be somewhat formidable, was shown last week when the Thomas motor boat captured two of the three cup events in the regatta of the Eastern Yacht Club at Marblehead, Mass. Saturday the Dixie landed the Gay cup, her time for the 25 miles being 1 hour 10 minutes 2 seconds. The Spaghetti, owned by E. R. Hollander, was second in 1 hour 51 minutes 8 seconds.

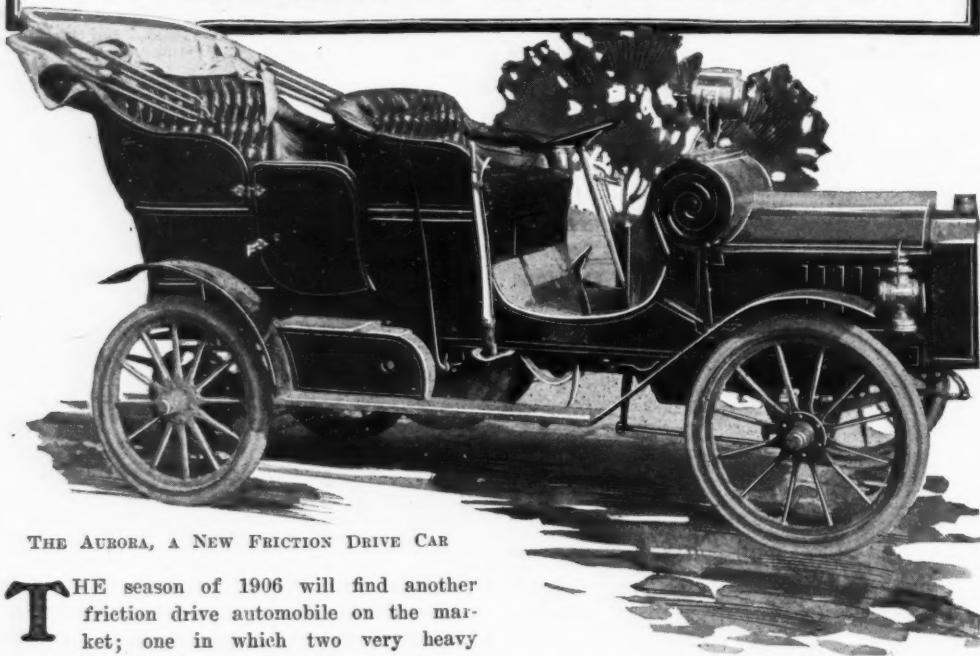
Farmers on a Rampage—Irate Indiana farmers started a crusade on automobiles in La Grange county last week. They built a pile of ties across the Ligonier-White Pigeon highway last week and the \$2,500 car belonging to Sol Mier of Ligonier, Ind., dashed into the obstruction, while another car right behind just stopped in time. The Mier car was partly wrecked, and now the sheriff is looking up the suspects. Another farmer, Elmer Townsend, living near Battle Creek, Mich., who smashed the car belonging to Millionaire Patterson, of Union City, and then threatened to go to court to test the rights of the automobiles on the highway, has backed down and pleaded guilty to a charge of malicious destruction of property. He paid a \$20 fine.

Parade at Oconomowoc, Wis.—Automobiles, thirty of them, formed the display feature of the fete at Oconomowoc, Wis., a fashionable summer resort near Chicago, last Saturday. The cars, gorgeously decorated with flowers, made the tour of Fowler lake, carrying Chicago members of the Oconomowoc Country Club. John Dupee had two entries in the parade. In the larger car was Miss Evelyn Dupee, granddaughter of the owner, accompanied by a maid. This rig was transformed into a tower of red and white roses surmounted by a gigantic doll. Yellow and white chrysanthemums bedecked the other car which carried members of the house party entertained by James H. Eckels, ex-comptroller of the treasury. Lawrence Fitch, Charles H. Simms, Arthur Dixon, George Earling, Montgomery Ward, P. A. Valentine and C. W. Scudder also had cars in the parade of the millionaires.



SENATOR ALLISON AND EX-SPEAKER HENDERSON TAKE TO AUTOMOBILING

AUTOMOBILE DEVELOPMENT



THE AURORA, A NEW FRICTION DRIVE CAR

THE season of 1906 will find another friction drive automobile on the market; one in which two very heavy opposing metal disks receive the motor power from drivers on a continuation of the crank shaft and from which the power is transmitted to the rear road wheels through double side chains. The machines will be built by the Aurora Automobile Co., of Aurora, Ill. The company built the trial machine in the summer of 1904 and during the last 11 months has been testing the machine over all the roads in the immediate locality as well as those around Chicago and other more remote points. During the period of testing the car has shown to advantage, the friction drive giving satisfaction to such an extent that the company has recently been incorporated for \$100,000, and the manufacture of machines already commenced. The number of machines built during the 1906 season will be limited.

The angle iron frame is different from the ordinary frames: four parallel angle pieces, the vertical part $2\frac{1}{4}$ and the horizontal part 2 inches, respectively, extend from front to rear. These are in pairs two on each side, lying 6 inches apart, the outer pieces with the angle turned outward and the inner pieces having the angles facing. The outer pieces are continuous at the rear, where the corners are slightly rounded and are held together at the front ends by an angle cross piece, cold riveted in place and reinforced with angle pieces also riveted in place. The use of double side pieces in this car is imperative because of providing suitable bearings for the shafts carrying the friction disks. Only two cross pieces, midway of the ends of the frame, are used; both aid in carrying the continuation of the crank shaft, one being near the rear of the motor and the other a short distance in front of the rear axle. The frame is 36 inches wide and 10 feet 4 inches long.

The frame is hung on 46-inch semi-elliptic springs in front and three-quarter elliptic springs, of the same length, in the rear. Both sets are directly beneath the side pieces of the frame and clipped on the top of their respective axles. Forged spring horns are riveted to the front of the frame, for the springs to be attached to, and the rear end of the front springs are also fastened to J-shaped hangers

similarly fastened to the frame. Six leaves are used in front and seven in the rear springs.

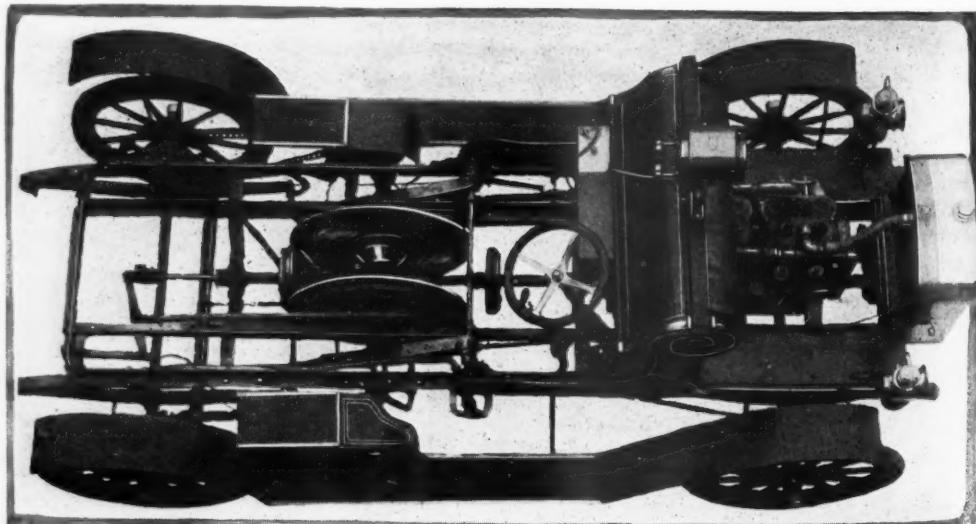
Both axles are made from square steel bars, $1\frac{1}{2}$ inches to the side. The front axle is dropped for crank case clearance, but the rear one is straight throughout. Integral with the front axle are the jaws for carrying the vertical axles of the steering knuckles which are of the Elliott type with the rod connecting the knuckles passing in rear of the axle. Thirty-four-inch road wheels are used. Solid tires have been fitted for testing work, but the company intends fitting all machines in the future with pneumatics. The car has 100-inch wheel base, 56-inch tread and weighs 2,400 pounds.

The power plant is a vertical four-cylinder water-cooled Beaver motor, with $4\frac{1}{4}$ by $4\frac{3}{8}$ -inch cylinders which generate 24 to 30 horsepower at 1,000 revolutions per minute. On each side of the crank case are two lugs which rest on the inner pair of side pieces of the frame and are bolted to the horizontal parts of the angle. The cylinders are cast in pairs with all parts integral. The crank shaft is a $1\frac{1}{2}$ -inch forging with throws set at 180 degrees and runs in plain bearings. The pistons, rings, wrist pins and connecting rods

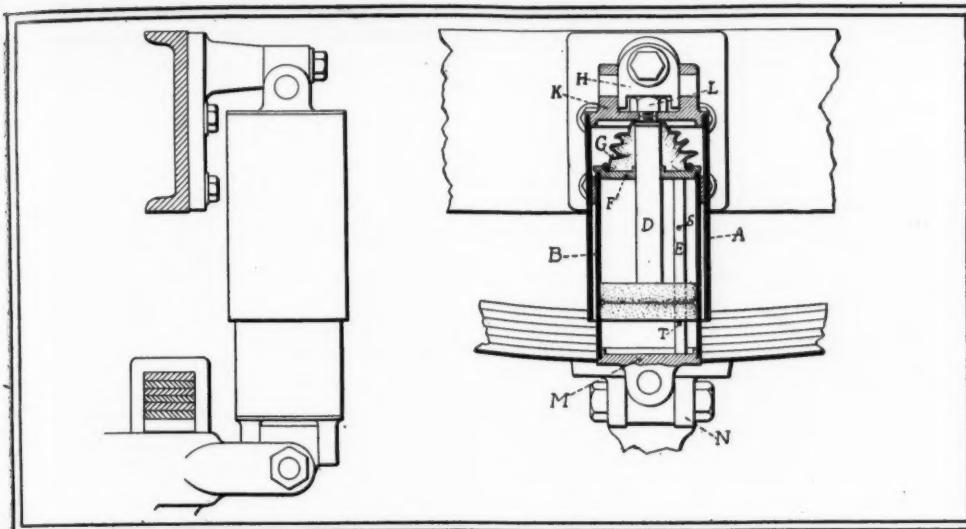
are of typical construction. Ignition by jump spark is employed, spark plugs being placed vertically in the heads of the valve ports over the inlet valves. On the dash is a four-vibrator coil, and beneath the seat cells of storage battery and also six cells form an extra set for emergency uses only. Within the crank case splash lubrication is used for the crank shaft bearings as well as those of the crank and wrist pins. On the right side of each cylinder is a glass oil cup with duct leading to the cylinder wall from which the pistons and cylinder walls are lubricated. The flow of oil through the ducts is controlled by a valve in the duct.

A fan is not resorted to in cooling the cylinders. Forming the front of the bonnet is a vertical tube Long radiator, from the bottom of which the water is drawn by a gear-driven rotary pump, on the front end of the cam shaft. The pump forces the water to the right side or the rear pair of cylinders. After circulating through the jackets it exits from the top and passes to the right center of the front pair of cylinders and finally passes from the top of this pair to the top of the radiator. The rear cylinders get the cool water from the radiator, while the front pair have to take the warmed water from the rear pair of cylinders. This condition of the front pair is improved by the cool air first coming in contact with them. A float feed carburetor is carried on the crank case at the right of the cylinders and between the pairs. From it the mixture passes through branched pipes to the valve ports on the left side. A cylindrical muffler, of the company's manufacture, is carried on the left side just behind the motor. The interior of the muffler resembles a roll of paper with the gases entering the tube-like space in the middle and being left to expand between the coils and finally exit from the periphery at the rear end.

Naturally, the transmission forms the most interesting part of the car. The crank shaft is continued back through the center of the chassis to the rear axle, carrying on it two paper friction wheels, that in front of the friction disks for giving the reverse and one cone-like wheel behind the disks for driving the car ahead. There is no clutch between the motor shaft and the continuation of it called the transmission shaft, but just back of the fly wheel is a peculiar coupling between the shafts. The crank shaft terminates in a large flange with four bolts extending rearwardly from it near the periphery. These



CHASSIS OF THE FRICTION DRIVE CAR OF THE AURORA AUTOMOBILE CO.



DETAILS OF CONSTRUCTION OF THE KILGORE SHOCK ABSORBER

bolts are arranged in a circle and are 4 inches long. The end of the transmission shaft, adjacent to it, terminates in a similar disk but has the bolts extending towards the front of the car and being arranged in the form of a circle of less diameter than those on the flange of the crank shaft are within them. An endless belt is looped around each bolt on both flanges forming an elastic coupling between the two shafts. In case the shafts get out of alignment this coupling is intended to take up the irregularities.

The transmission shaft is a hollow tubing, in which works a smaller rod for shifting the drive wheels on the shaft. In the tubing are long slots through which extend the keys that lock the driving wheels, the keys being fastened to the rod within the tube so that the wheels can be slipped to the front or rear in getting changes of speeds. The transmission shaft revolves in two bearings, one behind the friction disks and the other behind the union with the crank shaft. Both of these bearings ride in cross pieces of the frame and work trunnion-like in the boxes so as to take up slight irregularities in the shaft. Each bearing is oiled by an oil cup on the top of the bearing.

The friction disks are 27 inches in diameter and are made of cast iron, with the backs of each reinforced by radial and circular flanges integral with the disks. Each disk is combined with a cone-like disk piece at its center, which is solid with the disk on a 1 1/8-inch shaft. The shaft revolves in a Shelby seamless tube bearing, bolted to the lower surface of the two angle side pieces of the frame. On the end of the shafts carrying the right disk is a fifteen-tooth sprocket for chain drive to the road wheel and on the left is a spur gear in mesh with another spur gear of the same size on a shaft slightly to the rear of the disk shaft. On the end of this second shaft is a fifteen-tooth sprocket for chain drive. This additional shaft is necessary as the disks revolve in opposite direction and the spur wheels are needed to reverse the drive.

To drive the car ahead the cone-like driver on the transmission shaft is slid forward between the disks, which are sufficiently apart to let the driver enter so that it contacts with the cone part in the center of the disks. The disks are then moved closer together by a lever at the driver's right. The lever is on the end of a horizontal shaft crossing the chassis in front of the disks. On this shaft

are two cams that bear against other cams carried on sleeves on the shaft. To the sleeves are fastened the ends of levers that are fulcrumed at their opposite ends and in the center are fastened by a saddle to the outer ends of the friction disk shafts. A slight movement of the lever brings the disks tight upon the transmission driver and the disks begin revolving. The drivers on the transmission shaft are moved to the front and rear by a side lever, the forward movement of the lever giving forward speeds from the low to the high and a backward movement giving the reverse.

When the cone-like driver is between the disks so that its cone part contacts with the similar part on the disks and its periphery contacts with the straight face of the disks the highest speed and most positive drive is obtained. When traveling on the slowest speed the driver is at the circumference of the disk and only its periphery used in driving. Baldwin chains are used in the final drive, the reduction being from fifteen-tooth sprockets to sixty-tooth sprockets on the road wheels. This type of transmission eliminates the use of a friction clutch and differential.

Steering is through an irreversible worm and segment gear on the base of the steering pillar, all enclosed in a dust-proof case. On the front of the pillar beneath the steering wheel are two finger levers, one for the spark and the other for the throttle. The other control members are two levers at the right,

one called the power lever which when pushed forward presses the friction disks on the drivers and when drawn back applies the rear hub brakes. The other lever gives the different speeds. In the footboard are two pedals, one for applying fiber brakes on the periphery of the friction disks and the other for forcing the disks upon the drivers when it is not convenient to use the lever.

The part of the body that attracts the eye first is the dash. The carrying of the cylindrical gasoline tank on the top is responsible for the scroll-like effect given to the top of the dash. The position for the tank is good in that it is very accessible, but it takes some time to become accustomed to the appearance of it. The body work is made throughout by the company. Double side entrances are used to the rear seats, the step on the running board forming a cover to the sprocket and the chains. The front seats are not divided. Seating accommodation for five adults is provided. The upholstering is in black leather and the car is finished in green with red running gear.

KILGORE SHOCK ABSORBER

The running of this year's Bennett cup race and other big automobile events have shown the value to cars of anti-shock devices. This value consists in the wear and tear that the car is freed from, the saving in tire expense and most of all the greater speed the car is capable of making over variable road surface.

A new anti-shock on the market is the Kilgore, manufactured by the Kilgore Automobile Air Cushion Co., of Buffalo, N. Y., and with western offices controlled by William R. Johnston, 1336 Michigan avenue, Chicago, Ill. The Kilgore device is not a friction mechanism as generally adopted, but an air cushion device in which a tight-fitting piston works in an air tight cylinder filled with air. In the cylinder is a volume of air both above and below the piston with a small opening through which the air can pass from one end of the cylinder to the other. A set of four of these cushions is attached to each car.

The cylinder A is open at the bottom and at the top has the head K brazed in place and through the double movement joint H is attached to the frame of the vehicle. Within this cylinder is a smaller one B with a permanent bottom M secured to the axle or spring of the automobile through the joint



TILTING BODY OF THE AURORA, MAKING EASY ACCESS TO THE TRANSMISSION

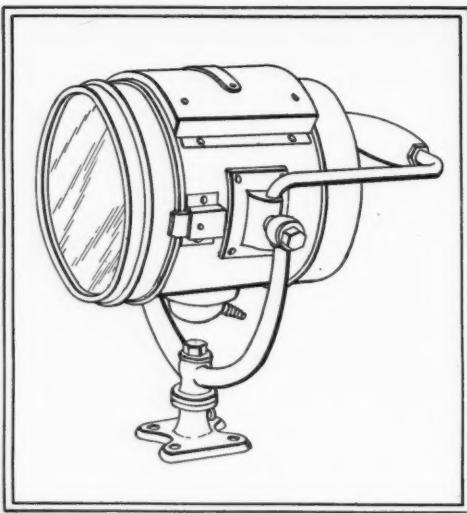
N. Within the cylinder B is the piston faced with leather for holding the compression both above and beneath. The piston is carried on the road D which is a sliding fit in the piston head F and fastens to the head of the piston A by the nut L locked in place by the joint part H. The leather or chamois bellows G is for excluding all dust. The outer cylinder A is not essential as far as the workings of the device is concerned but serves to exclude dust and acts as a cover for cylinder B. Within cylinder B is a hollow rod E closed at the ends but with two very minute openings S and T one above and the other below the piston.

To follow the working of the device consider that the car to which it is attached is heavily loaded and the piston in the position as shown. The wheels strike a raised object, such as crossing a stone or drop into a rut. The weight of the car tends to force the piston to the bottom of the cylinder B. At first the air in the cylinder beneath the piston will have passed through the opening T in the tube E and out into the cylinder above the piston. This continues until the piston goes so low that the hole T in the tube is covered by the piston and no more air can pass from beneath the piston to above it and there remains an air cushion which carries the car. Immediately after the downward movement of the car there is an upward one tending to tear the springs from the axles. As this movement of the car raises the piston the force of the car slightly raises the piston, uncovering the hole T and permitting the air to pass from above the piston to beneath it until the piston covers the opening S when an air cushion will be above the piston. There is thus a perfect air cushion both above and beneath the piston which absorbs the sudden drops as well as sudden rises of the car, both of which take place whenever any object is struck or the car drops into an unexpected hole.

Four cylinders are used on each car, one for each of the springs. The cylinders can be fastened to either semi-elliptic, full elliptic, three-quarter elliptic or platform springs. The company is manufacturing brackets for attaching the devices to the leading makes of cars so that the attachment can be effected at any garage. It is also manufacturing the devices in three sizes suitable for cars weighing from 500 to 4,500 pounds. The brackets both above and below the pistons are practically universal joints, which allow the cylinder to take any position.

A FOUR-WHEEL JACK

The Shawyer Co., of Springfield, O., has combined four of its Springfield automobile jacks in pairs so that the four wheels of an automobile may be raised to a distance of 7 inches from the floor at the same time. As shown in the illustration the lifting part of each jack is a 4 pitch, square threaded steel screw chased on $\frac{1}{8}$ -inch steel. One pair of jacks stands under each side of the car, the top of the jacks presumably resting against the bottom of the axles. A malleable iron skew gear connects the jacks in each pair and is worked by a crank attachable at either end. While the screws in the jacks, constituting each pair, are joined together, they can act independently, allowing each wheel to be raised and the remaining wheels left on the floor. The actual lifting capacity is placed at 3,500 pounds. The field of usefulness of this device includes the raising



BECKLEY-RALSTON BRACKET

of all four wheels from the floor, so that the pressure of the car is removed from the tires. It can be used for keeping the tires out of oil, generally found on the floor of a repair shop while a repair is being made.

NEW SEARCHLIGHT BRACKET

The Beckley-Ralston Co., Chicago, has introduced on the market a swinging searchlight bracket for use on automobiles by means of which ordinary lights can be used for searchlight purposes. The bracket has a flat base for attachment to the dash or other part of a car body by means of four screws and contains a double swivel, one by which the light can be thrown to the right or left and the other for throwing it up or down at any angle. The light is operated by a handle at the back, which is detachable, there being two vertical sockets on the bracket where it fastens to the lamp for the ends of the handle to rest in.

WITH THE MAKERS OF BOOKS

The Pneus, for August, contains many interesting skits on automobiling and tire experiences, among which is noted the Auto and the Idiot, a clever poem on rural touring.

Bulletin No. 126, issued by the Hyatt Roller Bearing Co., of Harrison, N. J., is devoted to the new rolling road in Cleveland, O., used in drawing horses and loads up one of the heaviest hills in the city. The roller road revolves on between 3,000 and 4,000 Hyatt roller bearings. In the bulletin the road is well illustrated.

The Goodyear Tire & Rubber Co., of Akron, O., comes along with perhaps the most attractively arranged book on automobile tires of the season. The book is shaped like a cross-section of a Goodyear tire secured to a universal rim. Within it every feature of the Goodyear rim is dilated upon and the construction of the tire given.

Cap Bros. Mfg. Co., of Kansas City, Mo., has for distribution a small folder illustrating

its 14-horsepower removable tonneau run-about car and its light side entrance touring car. The machines are constructed at the company's plant at 317-319 Southwest boulevard, have been under test for months and many are now in use in and around the city.

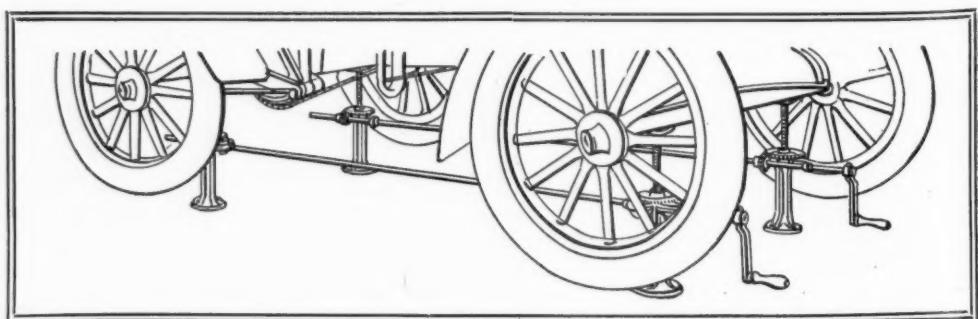
Seven styles of burners for acetylene head and side lights are the subject of a six-page folder put out by the Crescent Burner Mfg. Co., of New York. The styles differ in the shape of the arms, some being semi-circular, others elliptical and one or two are as the arms of an angle. The size and location of the holes through which the gas passes are different in each style.

Emil Grossman, manager of the Continental Caoutchouc Co., of New York, announces that the Continental concern has fitted a new and wider lug on tires now being sold. In the fall of last year tire makers decided to adopt a wider tire rim. With the extra width of rim there was danger in damaging tires because of not having them properly fitted and accordingly the Continental company has introduced the wider lug to accomplish this.

Samson Type-Course tires is the latest production of the Samson Tire Co., with American branch at 12 West Thirty-third street, New York, with A. E. Gallien manager. The ordinary Samson tire is a leather tread, vulcanized on to an ordinary rubber tire of standard type. The type-course tire is a product of the Samson company and it is stronger than the ordinary tire with vulcanized tread and is guaranteed by the maker to be non-skidding and not to blow out. This guarantee is furnished to every buyer.

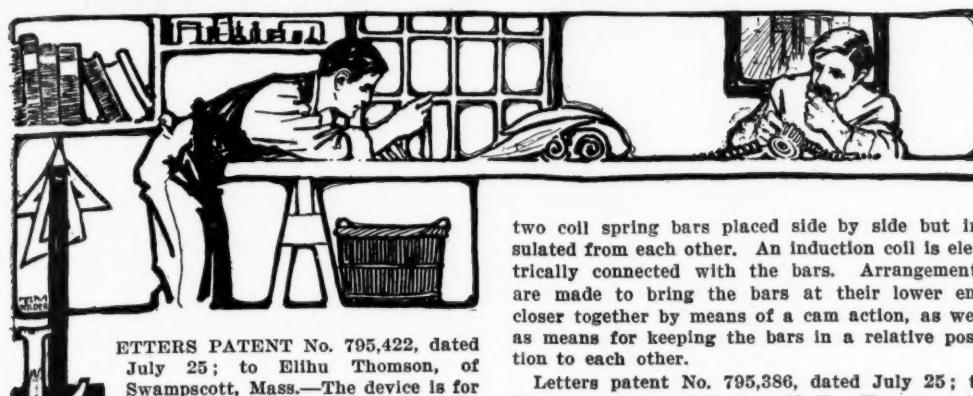
The Heald cylinder grinder, a product of the Heald Machine Co., of Worcester, Mass., is intended for the accurate grinding of the interiors of cylinders in gasoline automobiles. The grinding spindle is mounted in double eccentrics, giving a planetary movement to the spindling and grinding wheel. Eight changes of speed are provided for rotating the eccentric and the wheel spindle is hardened and ground and runs in adjustable bronze bearings. The company has recently issued a small catalogue devoted exclusively to illustrating and describing the machine.

Type X, a new 20-horsepower touring car built by the Pope Motor Car Co., of Toledo, O., is briefly described in a four-page flyer now in circulation by the company. The model is unique in that it possesses a vertical four-cylinder motor with water jackets cast integral with the cylinders, the well known copper water jackets, so long used by the Pope company, having been discarded in this model. The use of atmospheric inlet valves is maintained, but the exhaust valves are located in the cylinder heads and actuated by overhead rocking arm. The inlet valves are located at the side of the exhaust valves in the cylinder heads.



FOUR-WHEEL JACK MADE BY THE SHAWYER CO., OF SPRINGFIELD, O.

CURRENT AUTOMOBILE PATENTS



ETTERS PATENT No. 795,422, dated July 25; to Elihu Thomson, of Swampscott, Mass.—The device is for the prevention of pounding in a gasoline motor. Parallel with a main cylinder is a small auxiliary cylinder. In the piston of the main cylinder is an opening which communicates with the combustion chamber and also with the auxiliary cylinder, so that in case of preignition the exploded gases can pass through the opening in the piston into the auxiliary cylinder. In the head of the main cylinder is a cylindrical combustion chamber placed transversely across the head. This chamber is water jacketed, the jacket having inlet and outlet ports, with the control of each under the care of a valve that is worked by a piston in the auxiliary cylinder, so that when preignition takes place and heat is generated the ports are opened into the water jacket and a greater amount of cooling water is admitted into the jacket.

Letters patent No. 795,357, dated July 25; to Harry B. Maxwell of Rome, N. Y.—In his carburetor the float chamber is separate from the mixing chamber, the latter being a vertical tube with an air inlet at the bottom and a passage to the motor at the top. Between these openings is placed a hollow cylindrical damper with its axis horizontal and the damper so made as to entirely obstruct the passage in the tube. In opposite sides of the damper are round openings, and in line with the axis of it is a horizontal spraying nozzle. In the end of the nozzle is a needle valve for the purpose of regulating the flow of gasoline. The damper is rotated either by hand from the steering wheel or by governor and according to the degree it is rotated the passage of air past the nozzle is lessened or increased. As the passage is lessened the needle valve is closed, and vice versa.

Letters patent No. 795,273, dated July 25; to Louis A. Essner of Princess Bay, N. Y.—In his carburetor the use of a float is dispensed with, a fuel check valve being used instead. The casing is cup-shaped, with the air entering at the bottom and the mixture, to the motor, passing from the top. Within the casing is an elbowed opening or passage, through which gasoline enters. In this passage are two valves, one a fuel supply valve placed horizontally, and under gear control from a vertical shaft outside of the carburetor, and the other is a vertical check valve on the bottom of the stem of the spring controlled air valve, which fills the top of the casing and bars the passage to the motor. Beneath this passage and above the air entrance is a finely perforated partition across the chamber and over this casing a rotating plate with graduated apertures. This plate is geared to the same shaft as the inlet control valve. Above the plate is a rotary fan, adapted to be rotated by the inrushing air. As the motor starts the check valve is raised by suction on the air valve and gasoline is admitted.

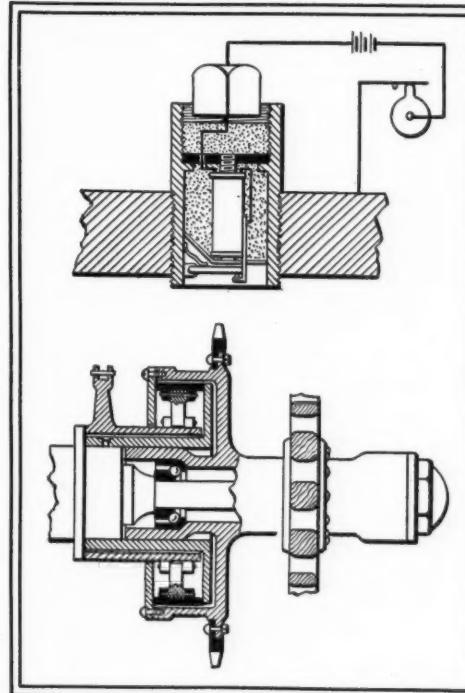
Letters patent No. 795,767, dated July 25; to John H. Hershberger of Wilkesbarre, Pa.—This invention is a chain attachment for wheels to prevent slipping. On either side of the tire adjacent to the rims are endless chains with turnbuckles for adjustment. Across the tread of the tire, between these chains, are cross chains with long end links for passing through the links on the endless chains and through the former links are placed circular links for holding the cross chains in place. The object of the cross chains being so fastened to the others is that the car may be run without the cross chains, but the other chains left in place.

Letters patent No. 795,497, dated July 25; to George A. Elsasser and Paul M. Elsasser of Philadelphia, Pa.—In the timing of the spark in an explosive motor the spark plug is connected to

two coil spring bars placed side by side but insulated from each other. An induction coil is electrically connected with the bars. Arrangements are made to bring the bars at their lower end closer together by means of a cam action, as well as means for keeping the bars in a relative position to each other.

Letters patent No. 795,386, dated July 25; to George A. Cutter of Nashua, N. H.—The transmission gear referred to is a combination of belt and

THURSTON'S SPARK PLUG



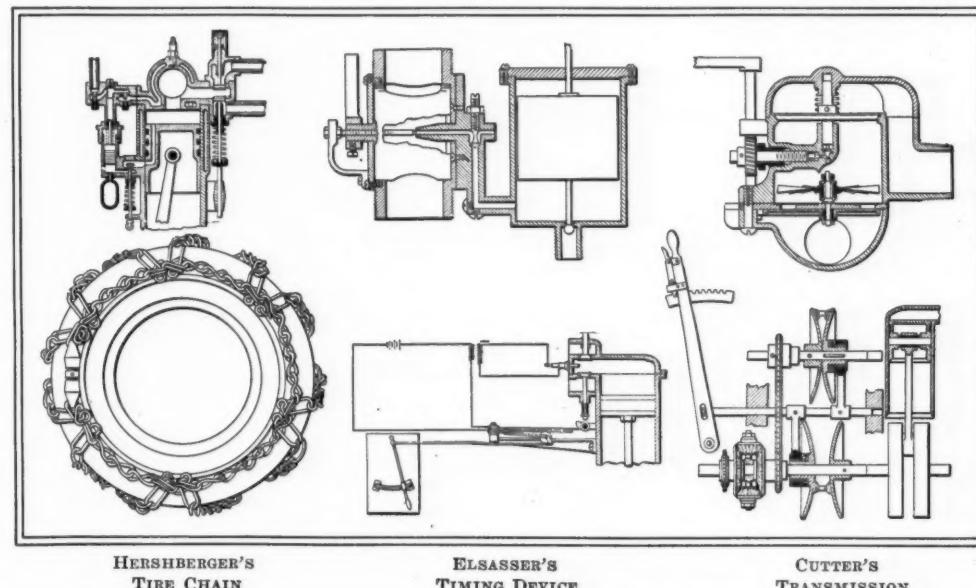
RAW'S COMBINATION HUB

chain. On the motor shaft is an expandable pulley and on another shaft, parallel to it, is a similar pulley with a belt connecting the two. On the second shaft is a sprocket for chain drive to the road axle. Variations in speed are obtained according as the diameters of the two expandable pulleys are varied. With the pulley on the motor shaft of large diameter and the other pulley small

THOMSON'S MOTOR

MAXWELL'S CARBURETER

ESSNER'S CARBURETER



high speed is gained and vice versa. The inventor arranges to have the differential on a sleeve on the prolongation of the crank shaft. The movement of the lever gives the different diameters of the pulleys. Each pulley is in halves, like facing cones, with a movable part between them, which acts as a support for the belt. One-half of each pulley is on a sliding arm, movable by the lever.

Letters patent No. 795,459, dated July 25; to Fredus A. Thurston of Chicago, Ill.—The invention is an electromagnet spark plug. A hollow casing is fitted into the end of the cylinder. In this casing is placed a coil with an armature. The coil is separated from the armature by a mica disk. A contact is carried by the coil which makes connections with the armature. Means are provided for causing the armature to make connection with the coil. The attraction of the armature opens the circuit. The magnet is enclosed within an insulating material.

Letters patent No. 795,418, dated July 25; to Charles Raw of Toledo, O.—The invention is a combination hub, sprocket and brake drum for the drive wheels of automobiles. Ball bearings are used at either ends of the axle bearing. The hub is integral with the brake drum and the sprocket is also integral with the brake drum. Within the drum are the friction expansion bands carried on a prolongation of the axle casing.

Letters patent No. 794,727, dated July 18; to Joseph F. Merkle, of Milwaukee, Wis.—The inventor controls the speed of the motor by holding open the exhaust valve. The valve is regularly opened by a rotating cam. A plate is pivoted around the cam axis and rotates irrespective of the cam. Arrangements are made that this plate can be made to rotate with the cam and as the plate has a surface for retaining the valve open for periods of different length according as desired, the speed of the motor is controlled thereby.

Letters patent No. 794,054, dated July 18, to Edwin G. Nicewander, of Pittsburgh, Pa.—The invention is a device to aid in cooling motors in automobiles when the car is running. It consists of concentric funnels placed in front of the bonnet and terminating within the bonnet in front of the motor. The mouths of the funnels being to the front, volumes of air are gathered in and conveyed to the motor.

Letters patent No. 794,247, dated June 11; to Dolphus D. Palmer, of Waltham, Mass.—The universal joint of the inventor has a ball piece on the end of one shaft with hollow grooves in the surface of the ball. The other shaft carries a socket with gudgeons having heads to enter the grooves in the ball. The ball is hollow and has an opening through which lubricant may be put in to oil the joint.

Letters patent No. 793,882, dated June 4; to Isidor Kitsee, of Philadelphia—This invention relates to a method of partially restoring the usefulness of the active material in the positive plates of a storage battery. It consists in bringing the active material in the grid into contact with a lower oxide, which changes the active material into a salt that serves to bind the oxide particles together.



ROADSIDE TROUBLES

An Ounce of Prevention
Copyrighted by the American Motor League

By Chas. E. Duryea



AMPLE strength and weight in the running gear parts is an insurance of long life and satisfactory service and weight in these parts is not so objectionable as in the body and fittings, which add no strength, but which require that both motor and running gear must be heavier and stronger to carry them. Some buyers imagine that because the motor does the work, there is no need to save it by giving preference to light, carefully designed parts instead of heavy, clumsy ones, but those who have had experience know that useless weight is a thing to be avoided, for each additional pound means a continuous added labor with consequent increased expense for maintenance and repair, from the gasoline tank to the tires. Not only does the added weight cause added expense and shortened life, but it decreases the efficiency of the vehicle, particularly on soft roads and on hills.

POWERFUL MOTOR—The soul of the vehicle is the motor. See that it is a generous one. It is the universal experience of the locomotive, trolley car, traction engine and automobile users that more power is needed and most second-hand automobiles are such because their buyers discovered, too late, their error of judgment in the matter of power. It is not easy to fool a large number of the public continuously, so, in the absence of experience with the subject, the trend of buyers generally is a fairly safe guide and this trend is toward motors of higher power and lighter weight. It is of no advantage, but rather a disadvantage, to have high power if the weight is also proportionately high, but the combination of high power and light weight is what is wanted. These remarks apply with equal force to all three systems.

ACCESSIBILITY—In addition to deciding on the system and the use to which it is to be put, consideration should also be given to its operation and care. If the vehicle is to be cared for by the operator instead of by a mechanic, possibly the feature of most importance is accessibility. Faulty design in this respect has been responsible for more dissatisfaction than any other one cause. It is not so much the annoyance of having to make some little adjustment on the road that disgusts the user, but the fact that he soils his hands and clothing in making this adjustment, whereas if all parts were absolutely accessible the adjustment could be made with wrench, screw driver or pliers and thus avoid soiling even one's fingertips. For the highest satisfaction we may conclude it is absolutely necessary that all the parts be accessible, not

comparatively so, but actually so, permitting an adjustment or a repair to be made in the easiest manner and with the least expenditure of time. It is not enough to be assured that parts give no trouble. See for yourself that they may be removed from the vehicle readily so that repairing is largely confined to renewing or replacing the parts that may be damaged. Note if you can readily apply a wrench or other suitable tool to the various parts and avoid any design that requires one or more parts to be removed in order to get at other parts. While, of course, this is not always possible to avoid, there is a vast difference in designs in this respect. Some permit an almost perfect accessibility, so the crank shafts, pistons, rear axles and similar important parts can be removed in a half an hour or less, while others require that the vehicle be dismantled at an expense of a whole day's time or more to get at and remove similar parts. It is very evident that a repair bill will be many times larger in such a vehicle than in an accessible one. A stitch in time saves nine and accessibility not only saves money in making the repair, but it insures attention in the first place and thus saves repairs being needed. Inquiry on this point should be made to cover all important parts, and if it is not evident that they may be quickly and easily removed, the removing operation should be explained in detail. Intelligent selection is most likely to insure satisfaction in use, which in turn insures a more rapid increase in the number of autos desired by the public. Buying a cheap machine "to learn on" or a broken down second-hand one to get some "experience" is one of the surest ways of getting dissatisfaction and bringing discredit upon the automobile generally. Fortunately, it usually increases the fever and means additional expense to the buyer to get a good vehicle later. The beginner needs the best of tools, and, like with the car itself, a knowledge of the use of these tools is essential. Good tools in the hands of the inexperienced often prove an injury, whereas they should be beneficial.

DURABILITY—Next to accessibility in importance, is durability. See that the wearing parts are large, so that they may be strong enough to continue their services for many years. This applies to all bearings not only on the motor but on all parts of the vehicle and it further should include the carrying parts, that is to say, the wheels, axles, springs and tires, for if these parts are too small, they are overworked and break down, not only causing trouble but frequently being a source of danger. In considering size of parts, remember that these things are matters of proportion, that a part which would be large on a light weight vehicle may be altogether too small on a heavy vehicle.

EDITOR'S NOTE—This is the second of a series of articles by Charles E. Duryea. These articles will be prepared for publication in book form and will be distributed by the American Motor League to its members during the coming year.

For example, a crank pin bearing may transmit the same amount of power and yet give good results with a 5-pound piston where it would give trouble if a 10-pound piston were connected to it. It is quite evident that the strain on the crank pin is much greater with a heavy piston than with a light one and this reasoning applies to all parts of the vehicle. A given spring, wheel, axle or tire will be far more durable under a light load than under a heavy one, so when durability is considered, proportions must be kept strongly in mind. Here experience enters, and it may be assumed that any construction that has been continued in use by its makers for several years is in all probability satisfactory. Nothing beats experience; and late models, especially from inexperienced people, may, with safety, be looked at several times before purchasing. The conditions to which an automobile are subjected are so much severer than imposed on most other mechanisms, that inexperience in the hands of the public with a particular one is the best and safest guide. Avoid new designs during their first year.

FLEXIBILITY—In relation to durability, flexibility has a decided bearing and constructors are now aiming to secure flexible arrangements instead of rigid ones, having learned by severe experience that the weight necessary to secure suitable rigidity cannot be permitted in a road vehicle. By flexibility is meant the ability to pass over uneven roads without twisting the framework or the body so as to strain any of the parts or bind any of the bearings. A vehicle that pushes easily on a floor and runs like a dream on asphalt may lose its ability on rough or muddy roads, simply because its bearings bind so forcibly as to take all the power. A good test for flexibility is to run the vehicle diagonally across a gutter and note its performance. If one wheel lifts in the air or if while standing across the gutter with opposite front and rear wheels therein the motor runs badly, it may be assumed that the vehicle is lacking in the matter of flexibility. The length and shape of the supporting framework, the design of the frame and the material of which it is made and many other features enter into this subject. In general it may be assumed that two short frames are individually more rigid while collectively more flexible than one long one; so that arrangement is probably best in which the mechanism is grouped as compactly as possible; each group being rigid in itself but flexible in relation to the other groups. Since it is common to mount the motor on the framing which also carries the body, this framing is relieved of more or less strain by the use of long springs and large wheels, so that these desirable features are advantageous to the machinery as well as to the passengers.

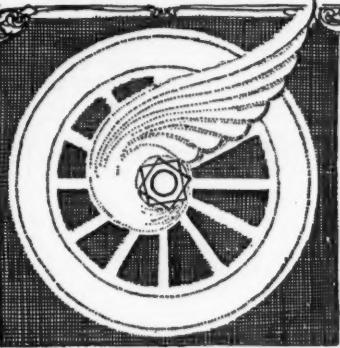
Flexibility can be looked upon as the important feature in every car and should receive very careful attention when purchasing a machine.

AMERICAN MOTOR LEAGUE

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OFFICIAL BULLETIN

THIS LEAGUE

Is Now Collecting Route Information

covering all automobile routes in the important states and will publish road books for motor car users as fast as complete information is received. The A. M. L. is the only organization engaged in this work, and it invites the co-operation of all persons interested. For full information and membership blanks address American Motor League, Vanderbilt Building, New York City.

Official Repair and Supply Stations

TO THE PROPRIETORS OF ALL AUTOMOBILE REPAIR SHOPS, SUPPLY HOUSES, STORAGE DEPOTS AND CHARGING STATIONS

Members of the AMERICAN MOTOR LEAGUE are now touring in all parts of the United States.

A little while ago the executive committee of the AMERICAN MOTOR LEAGUE authorized the president "to at once carefully select and appoint, by proper contract, a suitable number of

Official Repair Shops, Supply Stations and Charging Stations

to compile and arrange the same in a list for the convenient use of automobilists; to print said list and all additions and renewals thereof in the official TOUR BOOKS and ROUTE BOOKS of the League and in the official organ, and to issue to the proprietors of each OFFICIAL STATION a certificate of such appointment with instructions that each such certificate be conspicuously displayed in the office or place of business of the proprietor."

Appointments of Official Stations are now being made.

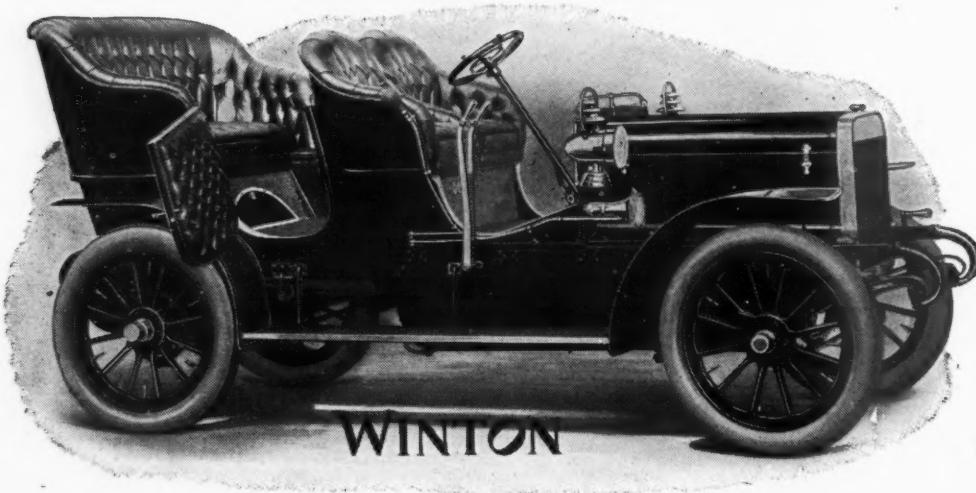
If you, or any of you, feel an interest in the work of the organized users of motor cars and will co-operate in building up the A. M. L., the secretary will send you blanks upon which you can make application for official appointment.

Only one official station is selected for each town except in the populous cities.

Address all communications to

F. A. EGAN, Secretary American Motor League,
Vanderbilt Bldg., New York.

WINTON



TROUBLES GALORE BEFORE HE BOUGHT A WINTON

Using first a French machine and then an American car, Mr. C. W. Hunt, of West Brighton, N. Y., experienced practically every trouble known to motorists.

Now Mr. Hunt owns a Winton. With it his experience "has been of a pleasing nature, best shown by considering the points that caused trouble on the cars I formerly owned:

"My Winton engine starts at once and has not missed explosions in service. The carbureter furnishes a mixture that is certainly good; never too poor to ignite and never so rich as to soot the spark plugs. Works equally well on level or hill and in fine or foggy and rainy weather. The oiling device works efficiently and needs no adjustment. The cylinders are oiled directly and apparently in a perfect manner, as there has been no blue smoke from the exhaust either in starting or in running. The water cooling system requires no attention except the weekly addition of about a quart of water. The pneumatic control works charmingly. The engine accelerates smoothly in marked contrast with the jerky way of my other machines. The Winton individual clutch system enables us to start slowly and to increase speed smoothly. There is no wrenching of the machinery when the speed gears are changed. There has been no stoppage of the engine of any kind or character for examination or adjustment of any part since it has been in use. Every time it has been out of the stable my Winton has made a non-stop run, whether the journey was long or short."

FOR COMPLETE SATISFACTION PURCHASE A WINTON

Five Models—16-20 to 40-50 h. p.—\$1,800 to \$4,500.

**THE WINTON MOTOR CARRIAGE CO.
CLEVELAND,** Member A. L. A. M. **OHIO, U. S. A.**

Branch Houses in Chicago, New York, Philadelphia, Boston and London

Sales Agencies Everywhere

CATALOG NO. 2 TELLS ABOUT ALL WINTON MODELS

AUTOMOBILES DE DIETRICH & Cie

THE DE DIETRICH CAR QUALIFIED IN THE
FRENCH ELIMINATION TRIALS

SELECTED AMONG TEN OF THE BEST FRENCH MACHINES

SEE THE CLEARANCE

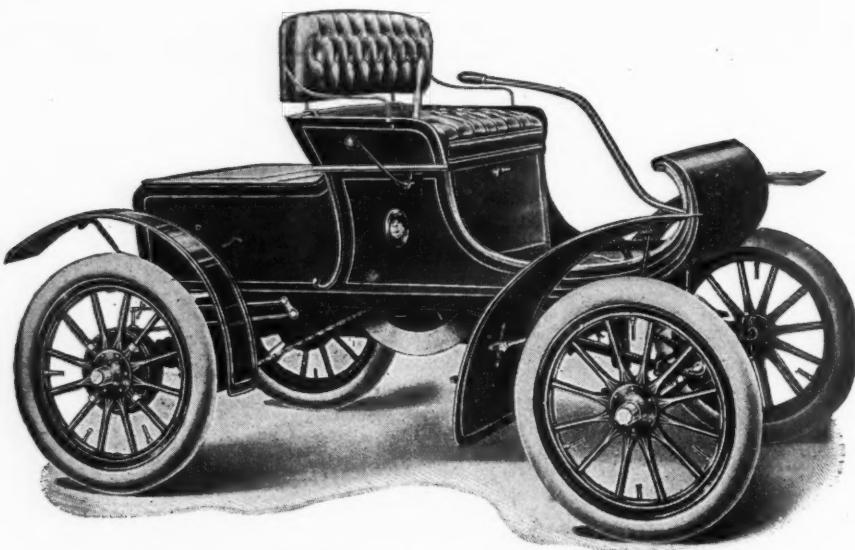


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FOR AMERICAN ROADS

THE SPEEDIEST, STRONGEST, MOST RELIABLE CAR
IN THE MARKET

DE DIETRICH AMERICAN BRANCH: 215-217 W. 48th ST., NEW YORK

OLDSMOBILE



Standard Runabout, Price \$650

Here's some pretty strong testimony:

Santiago, Cal., July 14, 1905.

"I am using my third Oldsmobile Runabout."

Concord, Cal., June 20, 1905.

"I have an Olds one-seat machine, and I find that it always goes, despite my inexperience—just seems to be built that way. I found that monkeying with it has caused what trouble I have had."

Prescott, Wis., July 26, 1905.

"I am running an Oldsmobile at present and like it very much, having ***run it three years nearly every day without it stopping on me.*** I can say with truth that it is the ***machine that goes.***"

The names of the above users will be sent on request. They are typical of the satisfaction experienced by every Oldsmobile driver.

Our nearest agent will gladly demonstrate the Oldsmobile Standard Runabout, the Oldsmobile Touring Car, the Oldsmobile Touring Runabout, or our Commercial Vehicles, the Oldsmobile Standard Delivery Car, and the Oldsmobile Ten-passenger wagonette. Write for catalog 52.



Olds Motor Works, Detroit, Mich., U.S.A.

MEMBER A. L. A. M.



Why
 Doesn't
 the
 "Flywheel
 in
 Front"
 Break
 Crankshafts
 ?

is a question that everyone asks us.

People seem to think that this construction is an innovation, and a doubtful one at that. As a matter of fact, every gasoline launch, whether one, two or four cylinders, has the flywheel in front, and if this construction is so bad for the **STEVENS-DURYEA**, and is so apt to break crankshafts, why do boat designers continue to use it year after year?

Also consider the several thousand 4-cylinder air-cooled cars that have been built in the last few years with the flywheels theoretically at the wrong end.

We knew this construction was theoretically wrong,—that, theoretically, the flywheel should always be between the engine and its load; but, as we had to employ it in order to secure our "Unit Power Plant," and as we had to have a "Unit Power Plant" in order to get a "Three Point Support," and as the wonderful speed and hill-climbing ability, the light weight, the even weight distribution on all four tires, the great reduction in the loss of power between the engine and rear wheels, the ability to run slower on the high gear, as evidenced in the Stevens-Duryea —were all to be had ONLY by a "Unit Power Plant" supported on "Three Points," there was only one thing to do, and that was to make a crankshaft so strong that the rear wheels or the clutch would slip before the crankshaft would break or even spring.

Another thing, neither the gasoline launches nor the air-cooled cars above referred to, nor the Stevens-Duryea have "Cone" clutches. All three, therefore, are free from the strains caused by the jerking of a cone clutch when in poor condition.

We have a Booklet that you ought to have.

J. STEVENS ARMS & TOOL CO.

Makers of the "Twentieth Century Hustler"

705 Main St., Chicopee Falls, Mass.

Member Association Licensed Automobile Manufacturers.

"The Maxwell"

To Automobile Buyers and Users:



HE "MAXWELL" wins the regular touring car event for cars costing from one to two thousand dollars, in the "Climb to the Clouds" at Mount Washington.

The above fact is not especially remarkable because every one knows the "Maxwell" expected it, but it was a remarkable performance when the following facts are taken into consideration:

FIRST—It was the only regular gasoline car that went up the mountains, which had traveled to the base under its own power, and upon which no alterations whatever had been made in order "to climb to the clouds."

SECOND—It was a regular standard "Maxwell Model H" touring car, without special axle but equipped with the same axle that had carried the car in a perfect manner throughout the "Glidden Tour." It was geared 3 1-2 to 1.

THIRD—It went up not only once but three times in two days—the last time going up much faster than it did the first two times, making the remarkable time of a fraction over fifty-one minutes.

This performance is the more noticeable when taking into consideration the fact that the Maxwell-Briscoe Motor Co. did not have to send two cars in order to get one up, but sent the one car up three times.

If you are a buyer of automobiles ascertain when you hear "Climbing the Clouds" discussed, whether the car that climbed was the regular car that you are supposed to be buying or whether it was a hill climbing machine especially made for the purpose. What good comes from a test like the Climb to the Clouds unless a regular car is used?



8 h. p. Runabout. Price \$750

"The Maxwell"

Serene in the confidence that we make a car that, as a reliable, economical and simple automobile, it is impossible to beat, we had no inclination to participate in these little local hill climbs and race meets being made continually, which are so distracting to business and so productive of false impression. Consequently we have stayed out of such affairs and "bided" our time until something worth while occurred. It came in the shape of the "Glidden Tour" and the "Climb to the Clouds."

The impression we had in this—the first race meet we have attended—was that cars were to be the regular car as sold by the manufacturer. We consequently made no alterations whatever in our car. We found out just before the event that all of the cars there had special axles or had alterations in some way made especially for the purpose. We would have made no alterations if we could, because we believe that the only good that can come of a test of this kind will result from the sending out of a regular car.

It is no trick to make a "hill-climbing machine." We venture to say that there is not an automobile man who has given the matter time and money who could not make a car that would climb Mount Washington satisfactorily; but the TRICK is to have a **REGULAR STANDARD MACHINE** go up, not only once, but **GO UP** as the Maxwell did—three times in two days, and be as good on its return as it was in the beginning, and to have this car the same in every respect as the car our customers get.

To those who are not familiar with the conditions in climbing Mount Washington we can only say that words almost fail to describe it. It is eight miles on steady climb, some places long pulls and over 25 per cent.

It is not surprising that some of the cars did not go up, for a motor car can be a good motor car and yet not be able to go up Mount Washington.

It is not surprising, however, that the Maxwell did go up, because the "Maxwell" never fails to do what is expected of it.

The "Maxwell" cars have no pump (thermosiphon). Their double opposed motor is in front under the hood and easily accessible in every part. They have Bevel Gear Drive. Metal Bodies. Transmission Case and Crank Case cast in one Aluminum casting. "Perfectly simple and simply perfect."

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MAXWELL-BRISCOE MOTOR CO.

Members American Motor Car Manufacturers' Association, Chicago.

TARRYTOWN, N. Y.

New York City Salesroom, 317 West Fifty-Ninth Street

Western Automobile Co., 1409 Michigan Avenue, Chicago, Ill.



Cars Entered in the Glidden Tour are 1906 Model

THIS PICTURE

tells a story that you cannot get away from.

¶ *It is taken from life on a mud road leading past the factory where*

MITCHELL

cars are made, and explains why the Mitchell is "the car you ought to have at the price you ought to pay."

TWO MODELS

Touring Car:
18-20 H. P.
4-Cylinder
vertical
\$1500

Runabout:
9 H. P.
2-Cylinder
\$750



We want you to investigate and if we can't convince you by examination and demonstration, we won't try to by argument.

¶ *All Mitchell cars are tested over this road before being made ready for shipment.*

¶ *If they "make good" in this kind of going, they will "make good" anywhere on earth.*

¶ *Send for our catalogue of "Common Horseless Sense."*

MITCHELL

MOTOR CAR COMPANY
RACINE, WIS.

Members American Motor Car Manufacturers' Association, Chicago.

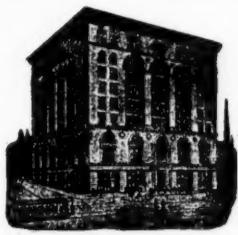


A GOODRICH TIRE RECORD

Cost of Tire Repairs, \$5.80

**Length of service three years and still in use.
Miles driven 17,500.**

**An unsolicited statement of noteworthy Goodrich Tire
facts, not a drummed up verdict.**



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ORGANIZED 1814.

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**State Mutual Life Assurance Company,
OF WORCESTER, MASSACHUSETTS.**

TELEPHONE
MICHIGAN MAIN 1842.

C. A. STRINGER & BRO., Michigan General Agents,

614-18 Majestic Building.

Detroit, Mich. June 6, 1905.

Harry C. Miller, Manager,
The F. B. Goodrich Co.,
80 E. Congress St.,
City.

Dear sir:-

It is a pleasure to express my complete
satisfaction with the Goodrich tires on my White automobile.

The entire expense for tire repairs for three
years, driving about 16,000 miles, was \$5.80. The
carriage has been driven about 17,500 miles to date.
It now has two new tires, one recovered tire and one
tire that has never been repaired in any way since I
bought the carriage new in March, 1902, and looks as
though it might last for considerable driving yet.

All of the tires have given splendid service.

I give this testimonial entirely unsolicited.

Yours truly,

C. A. Stringer

C.A.S. #2.

The Bailey "Won't Slip" Tire, regular Goodrich construction, but provided with the Bailey "Won't Slip" Tread. Prevents slipping, slewing or skidding.

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Philadelphia, 909 Arch St.
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Rims branded in the
channel with this copy-
righted mark have been
inspected and pronounced
perfect. We guarantee
our tires only on rims so
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HIGH GRADE AUTO SUPPLIES



Eight-Day Clock. Guaranteed
Special Price, Express Paid. \$8.00



French Ammeters, Voltmeters and
Combination Volt-Ammeters

These meters are made for testing batteries. They are far superior instruments to any other made in France or this country. Absolutely correct and will give perfect satisfaction. Packed in small, soft leather case to be carried in vest pocket.

AMMETER.

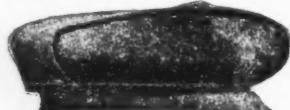
No. 250. Price.....\$3.50
Registers up to 20 Amperes.

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Registers up to 25 Amperes.

VOLT-METER.

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Registers up to 10 Volts.

COMBINATION VOLT AND AMMETER.
No. 254. Price.....\$6.00
Registers 12 Volts, 25 Amperes.



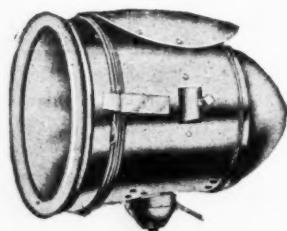
La Rapide Auto Caps
Auto Golf Cravnette. Made from best quality Imported Cravnette Cloth. Satin Lined. Tan color. Auto Golf style. Price, each. \$1.50
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The Royal Goggle
The latest Parisian novelty. Can be folded and carried in vest pocket. Case furnished free with every pair.
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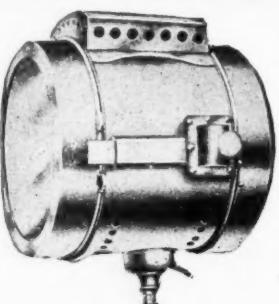
License Pads
For all States according to law. Made of best quality leather. Metal frames. Letters either painted, sewed or nailed. Price for five letters or less. \$2.25



Outfit No. 1

Comprising two bullets, like illustration, 7-inch front; generator, two drop-forged brackets, rubber gas bag, 15 feet of best rubber tubing.

Special Price\$25.00



Outfit No. 2

Two 6-inch searchlights, like illustration. Generator, 2 drop-forged brackets, 2 rubber gas bags, 15 feet of best rubber tubing.

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Outfit No. 3

Two 8-inch front bullets, open back and front, mirror lens reflector. One generator, 2 drop-forged brackets, 2 rubber gas bags, 15 feet best quality rubber tubing.

Special Price.....\$30.00



THE ROYAL
TIRE CASE
WITH
BAG

The "Royal" Tire Case
Complete with inner tube bag. Made of heavy waterproof material. Every automobile carries an extra shoe and several inner tubes. These cases protect your tires from moisture and look neat and handsome.

To fit 28x2½, 3, 3½ inch tires\$3.00

To fit 30x3, 3½, 4 inch tires3.00

To fit 32 and 34x3½, 4, 4½ inch tires3.50

To fit 36x3½, 4½, 4, 5 inch tires3.50

Also made in Metric Sizes to fit Foreign Tires.



La Rapide Gauntlets
Gloves, all styles...\$1.00 upward

PROMPT SHIPMENTS LARGE VARIETY

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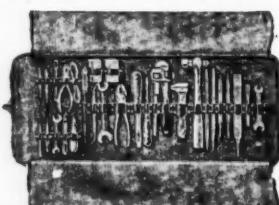
DISTRIBUTORS OF CONTINENTAL TIRES



La Rapide Automobile Dusters

For summer wear. Very popular. A necessity on dusty roads. Makes riding more comfortable and saves the clothing. Very generally worn by tourists. Large assortment. All colors. Made of linen, Cravnette, Amisilk, Mohair.

Prices\$1.50 to \$8.00



The "Crackerjack" Automobile Repair Kit

Contains enough tools to make any repair which can be managed away from a shop. At the same time there is not an ounce of superfluous weight. The case is of the best grade waterproof duck, and each tool is the best of its kind and is made for heavy service.

Price, complete.....\$12.50



Quick Chain Repairer

No owner of an automobile can afford to be without this wonderful little tool. Carry one in your kit for emergencies. It does the work as efficiently and quickly as a whole repair shop.

Price\$0.50



The finest line of French Horns ever imported to this country; 40 styles. They sound like a fog-horn.

No. 225. Price.....\$10.80

Diameter of Bell, 6½ ins, fitted with 40 in. tubing.

No. 226. Price.....\$13.00

Diameter of Bell, 8 ins, fitted with 40 in. tubing.



No. 81. Price.....\$2.50
This goggle has collapsible eye-shields made of silk, which fit perfectly around the eyes and exclude all wind and dust.

THE MOTOR CAR EQUIPMENT CO.

Manufacturers, Importers, Jobbers of Auto Accessories

55 WARREN STREET

NEW YORK

1645-47 BROADWAY

Knox Waterless Cars

Win New Triumphs in the Glidden Tour

They make the run from New York to Mt. Washington and return without delays or repairs, showing wonderful speed, as well as endurance, and arrive in perfect order.

This tour, during the most intense heat, shows that the **Knox Air Cooling Device** actually **Cools** under conditions that would be fatal to any other.

THE KNOX TOURING CARS made the hard run from Portsmouth to Mt. Washington (125 miles) faster than most cars of double their rated power, and did not require assistance, as did some others, in climbing the "Tug-of-War" in Crawford Notch. Knox Car No. 35 started fourth and arrived first at Concord, N. H., after the hardest day's run of the tour.

THE KNOX WATERLESS TRUCK which carried half of the baggage of the tourists gave a demonstration of reliability under difficult conditions that aroused the greatest enthusiasm among the tourists. Starting each day with the touring cars, it reached the designated stopping place within the time allowed for touring cars, generally passing the water-cooled truck that had started several hours earlier.

THE KNOX WATERLESS TRUCK climbed without assistance grades which no other truck has ever climbed. The Knox Truck was a stock machine. It was not built for climbing mountains; but it has proved itself able to surmount grades steeper than any on Mt. Washington. Its record for freedom from repairs and for economy has never been approached.

THE KNOX CAR, air-cooled by the Knox Patent Pin System, is the only Commercial Car suitable for all conditions, summer or winter.

Knox Automobile Co.
SPRINGFIELD, MASS.

Members of Association Licensed Automobile Manufacturers.

Largest and Oldest Manufacturers of Gasolene Commercial Cars

Selling Agents in all principal Cities.

Motor Age for One Year

and one copy of

The Automobile Hand Book

By L. Elliott Brookes

Regular Price
of Both
\$4.00

A work of practical information for the use of Owners, Operators and Automobile Mechanics,

Giving full and concise information on all questions relating to the construction, care and operation of gasoline and electric automobiles, including

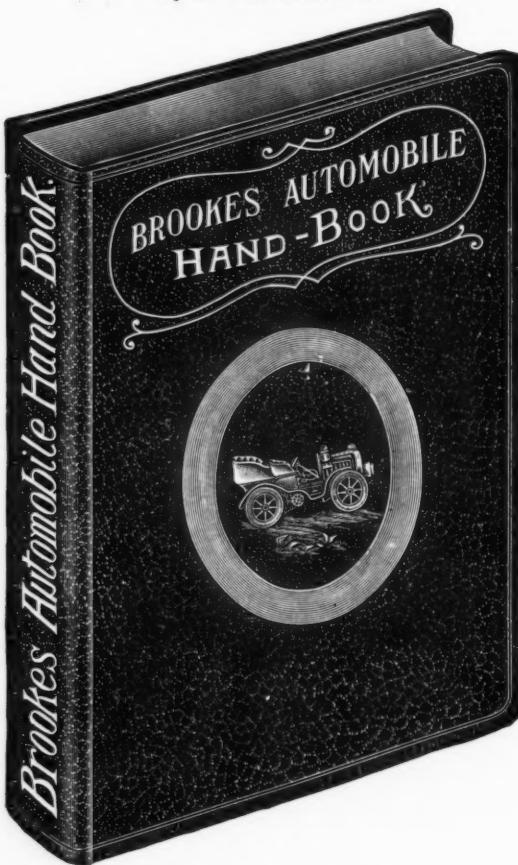
Road troubles
Motor troubles
Carburetor troubles
Ignition troubles
Battery troubles
Clutch troubles
Starting troubles

Pocket size, 4x6½. Over 200 pages.

With numerous tables, useful rules and formulas, wiring diagrams and over 100 illustrations, by

L. ELLIOTT BROOKES,

Author of the "Construction of a Gasoline Motor."



Special Price
for both
\$2.00

Know your
Automobile as
you would
know yourself

Be wise
and order
now

This opportunity
may not appear
again

The Practical Gas and Oil Engine Hand Book

By Brookes

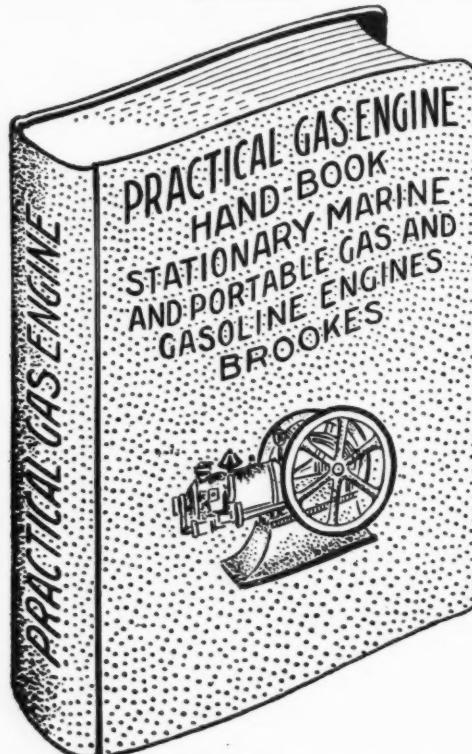
A manual of useful information on the care, maintenance and repair of Gas and Oil Engines.

This work gives full and clear instructions on all points relating to the care, maintenance and repair of Stationary, Portable and Marine, Gas and Oil Engines, including How to Start, How to Stop, How to Adjust, How to Repair, How to Test.

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This book has been written with the intention of furnishing practical information regarding gas, gasoline and kerosene engines, for the use of owners, operators and others who may be interested in their construction, operation and management.

In treating the various subjects it has been the endeavor to avoid all technical matter as far as possible, and to present the information given in a clear and practical manner.



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MOTOR AGE, 309 Michigan Avenue, Chicago

CADILLAC ECONOMY

Here is a statement which our Madras, India, representatives recently sent us, which for minimum cost of operating beats any we have ever seen:

CADILLAC MODEL A, 9 h. p.

Distance run, 70 miles exactly.
 Average speed, 18.29 miles per hour.
 Petrol used, 2.262 gallons.
 Petrol, miles per gallon, 30.9.
 Lubricating oil used, .15 gallon.
 Total cost of run, Rs. 2/8/6=81 cents.
 Total cost per mile, say pies, $-/-7=1.2$ cents.
 Total cost h. p. mile, say pies, $-/-1=0.14$ cents.
 Weight of car, 1,400 lbs.
 Weight of passengers, etc., carried, 748 lbs.

We do not *claim* an average of over 20 miles per gallon of gasoline over the average road in the hands of the average operator. Mr. Deveaux, of Toledo, recently drove a Model F, with two passengers, 280 miles (*without stopping the motor*) on two tanks of gasoline, about 13 gallons, at an average speed of 23 miles per hour, including stops.

We believe the Cadillac single cylinder will give the average owner more mileage for money invested than any car built, regardless of price or horse power.

CADILLAC AUTOMOBILE COMPANY

Members of Association of Licensed Automobile Manufacturers

DETROIT, - MICH.

MICHELIN

On all best cars---MICHELIN TIRES.

TO MANUFACTURERS—You never lose the sale of your cars by having them equipped with MICHELIN TIRES.

TO JOBBERS—Your salesmen book ready orders and do not have to push the sale of MICHELIN TIRES.

TO DEALERS—You do not have to make apologies for MICHELIN TIRES.

TO IMPORTERS—Your customers expect MICHELIN TIRES. If you give them a substitute you make more money. Please your customer and hold his trade.

TO CONSUMERS—Insist on MICHELIN TIRES—take no other, no matter what is offered.

MICHELIN TIRES have proved their superiority all over the world in every contest of reliability, durability and endurance.

In Gordon Bennett race the first four cars to finish were equipped with MICHELIN TIRES. In the Climb to the Clouds, Mt. Washington, MICHELIN TIRES carried first honors. Every important race in 1904 and 1905 won on MICHELIN TIRES. Every prize and cup goes to MICHELIN

MICHELIN TIRE AMERICAN AGENCY (Incorporated)

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 Washington, 1330 New York Ave., N. W.
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 Indianapolis, Indiana Automobile Co.
 Buffalo, 369 Pearl Street.
 Poughkeepsie, 14-20 Catherine Street.
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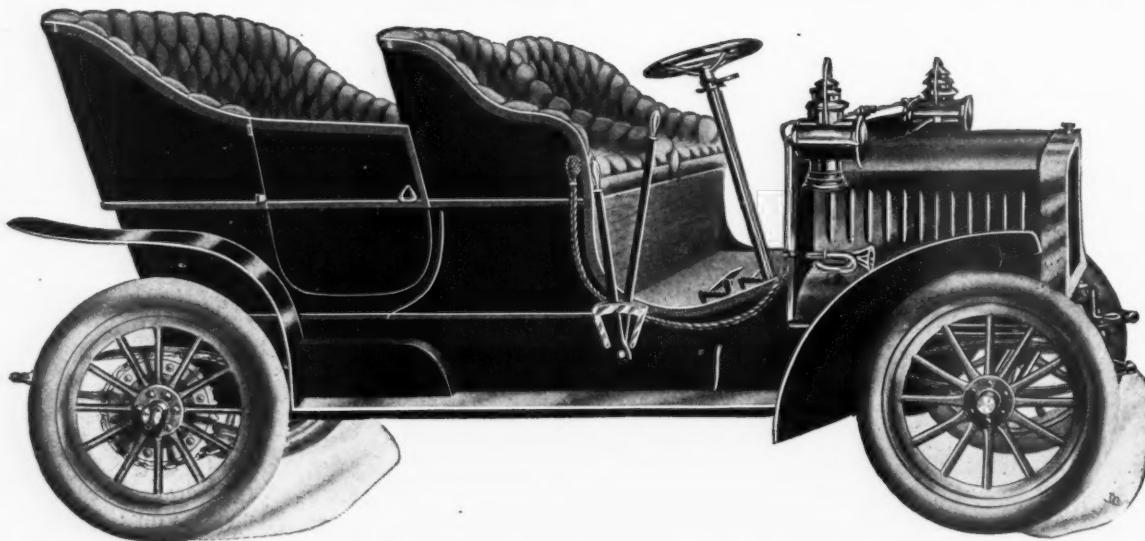
San Francisco, 304 McAllister Street.
 Minneapolis, Winston and Walker.
 St. Paul, C. P. Joy Auto Co.
 Pittsburg, 5903 Center Avenue.
 Albany, 97-101 Central Avenue.
 Philadelphia, 322 No. Broad Street.
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 Cincinnati, 904 Broadway.
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THE LAMBERT

THE FAMOUS FRICTION DRIVE

GUARANTEED FOR ONE YEAR



Model 5. 16 h. p. Complete with Tonneau, \$1200

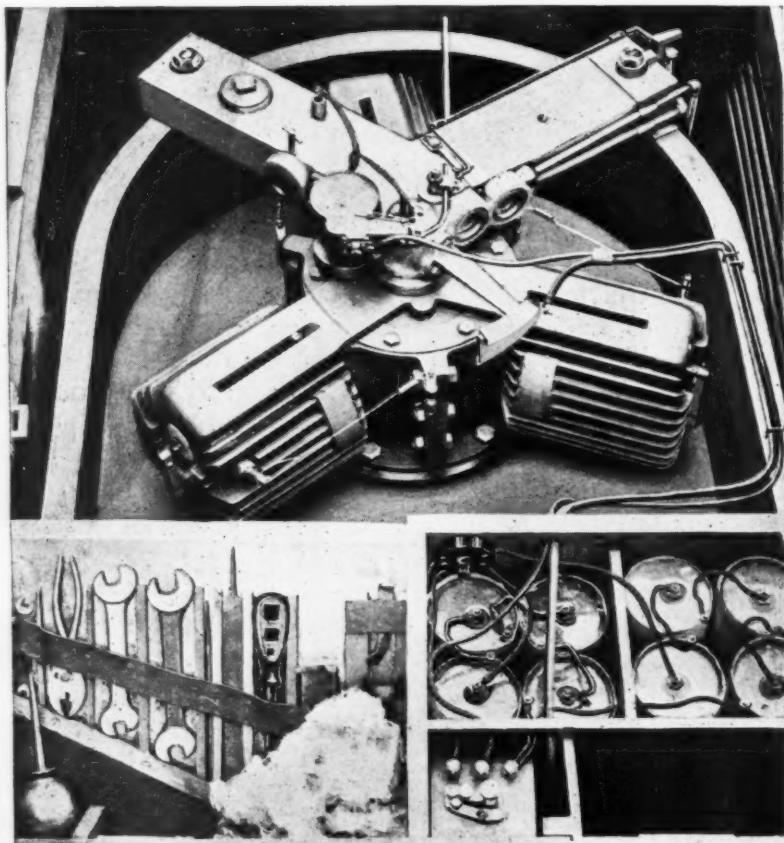
A high grade touring car at a medium price.
Quick delivery. A good proposition for agents.

Write for Catalog describing 5 models.

THE BUCKEYE MFG. CO., Anderson, Ind.

Members American Motor Car Manufacturers' Association, Chicago.

ADAMS-FARWELL



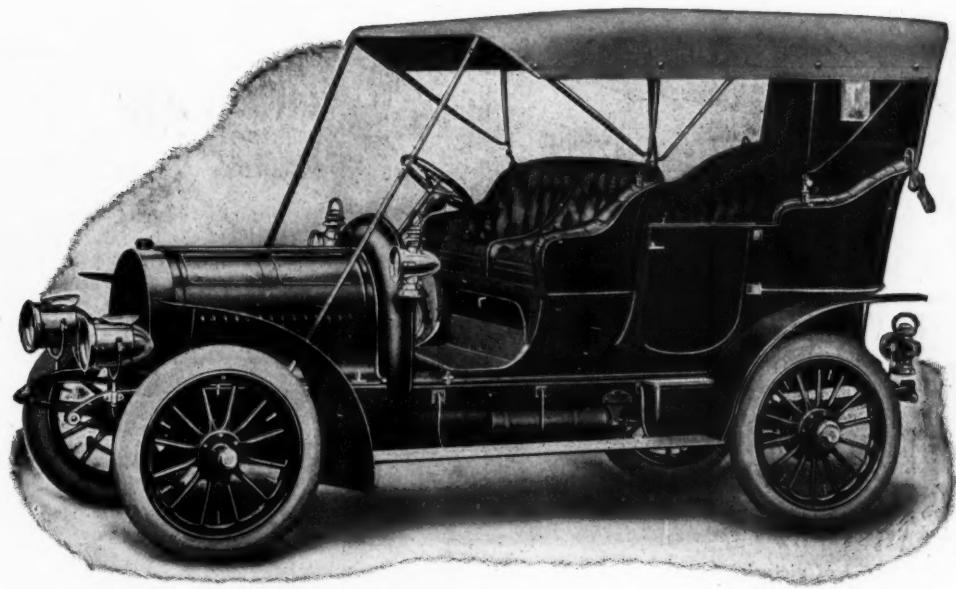
This is the motor that was in No. 30, The Adams-Farwell Motor Car that made such an excellent record in the Chicago-St. Paul endurance run. These three cylinders revolve. The air in contact with any part of the motor is thrown off by centrifugal force and must be replaced with cool air drawn in at the center. Every part of each cylinder gets the same rapid air circulation regardless of the speed of the vehicle.

The deep mud that required hour after hour low gear work had no effect upon our motor. Is there any other cooling system that will stand such a test without frequent replenishing of water tanks or stopping to cool the motor?

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THE ADAMS COMPANY
DUBUQUE, IOWA, U. S. A.

First Among the Best

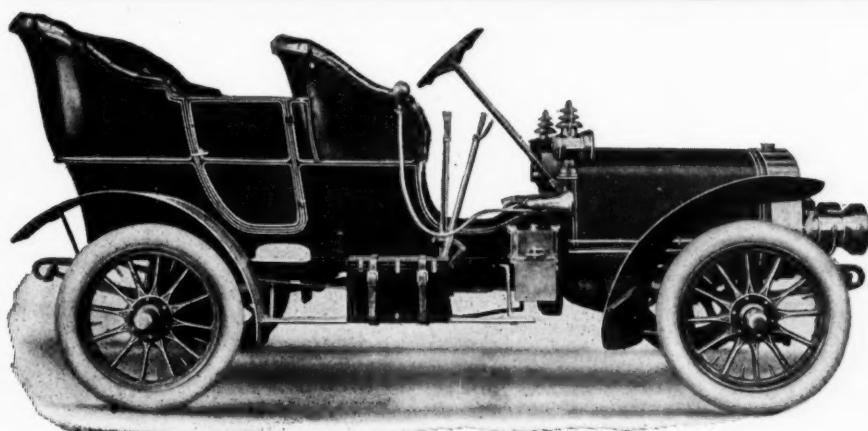


A ROYAL TOURIST--Those who know it best, know it is the BEST

Write for Nearest Agency

THE ROYAL MOTOR CAR CO. Department 2 CLEVELAND, OHIO

We Are Just Finishing



Our Last Lot of

50 4-Cylinder Yales

We Will be Able to Make
**REASONABLY
PROMPT DELIVERIES**

28 h. p.

104 Wheel Base

A Superb Finish and Ironed for Cape or Canopy Top

We want to sell these to agents who will be interested in our proposition for the coming season, and KNOW that this model will be a worthy INTRODUCTION.

THE KIRK MANUFACTURING CO., Toledo, Ohio

Member Association Licensed Automobile Manufacturers.

A Long Jump or Two Short Steps



Find an Elmore agent or user and you'll find a two-cycle enthusiast. The fame of the two-cycle idea has spread this season from ocean to ocean. Its principle—a continuous application of power—is irresistible and indisputable; and that principle is put into practice with absolutely perfect success in

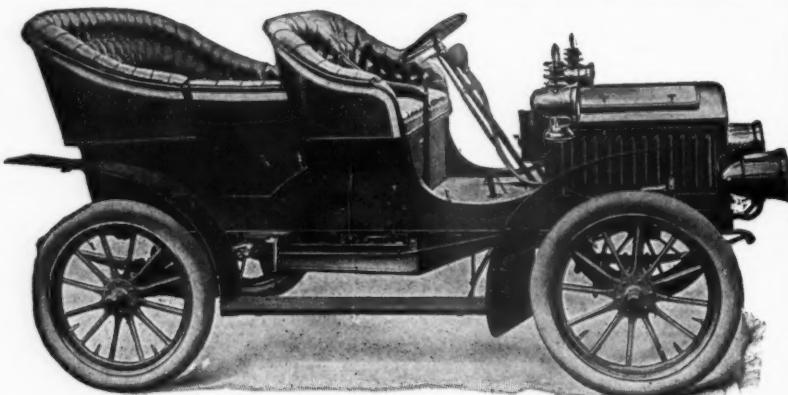
THE TWO-CYCLE ELMORE

Picture to yourself two men—one trying to cover the ground in long, hard jumps, the other forging ahead in quick, short steps. The first is the four-cycle—and bound to lose against the two-cycle with its even, steady gait. We have a book called "A Long Jump or Two Short Steps," which explains this in A B C style.

Better still, we have a record of victories in every test worthy of the name. Better still, we have the every-day testimony of thousands of users to which you can easily refer.

The Elmore two-cycle engine is no longer the "coming" engine—it is here. You'd better join the army of enthusiastic converts. Ask your agent or write to us.

Representatives: A. E. Ranney & Co., New York; Gathrop & Wister, Philadelphia; Seneca Auto Co., Rochester; Young & Miller, Detroit; Hein & Casper, Milwaukee; W. W. Leathers Co., St. Louis; Lowry Mfg. Co., San Antonio; J. A. Rosesteel, Los Angeles.



THE ELMORE MFG. CO.

2304 Amanda Street

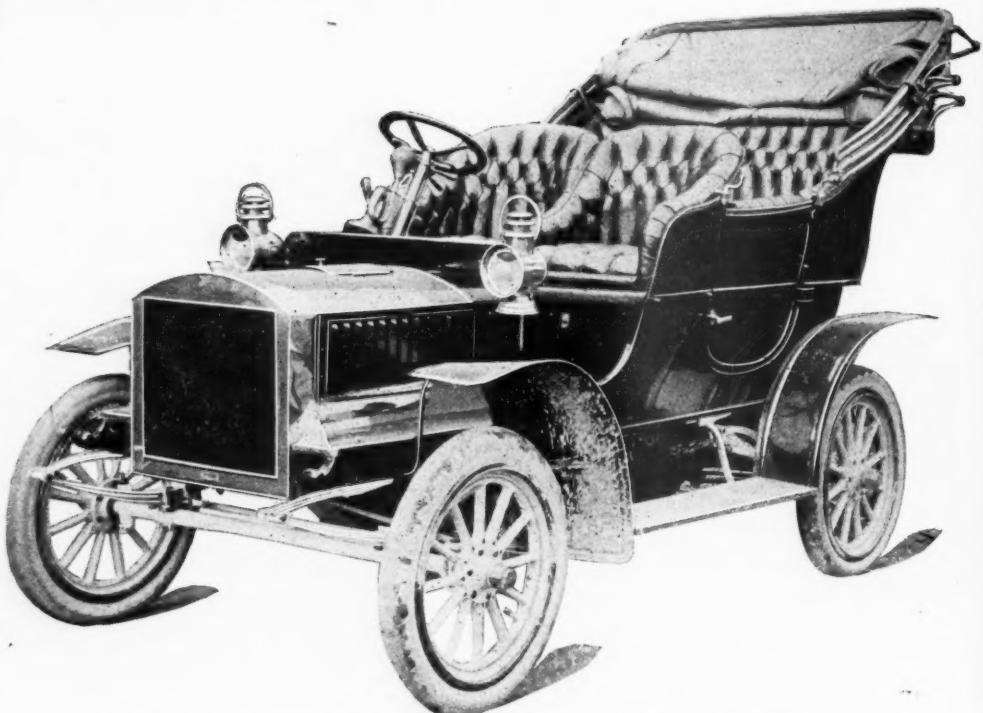
CLYDE, OHIO

This is the car that took second in the great Non-Stop Endurance Run from Chicago to St. Paul, only stopping the engine once, and then from no motor trouble, but to repair a front spring. The only car finishing ahead of the Jackson was a \$4000.00 car.

After going through this severe test, the same car won the cup in the five-mile handicap for cars that had taken part in the tour. Every car in the race sells for more money than the Jackson.

Why did the Jackson make such a record in the non-stop tour? Why did the Jackson win the cup?

Because good, honest material and workmanship counts in a test like this. Quality always shows up when the test is applied. Write for catalogue.



Jackson Model "C." \$1250.00

JACKSON AUTOMOBILE CO.

JACKSON, MICH.

FREDERICK J. TOURELLOTTE
ATTORNEY AT LAW
84 WASHINGTON STREET
ROOM 48

TELEPHONE CENTRAL 3579

CHICAGO.

May 4th, 1905.

The Continental Caoutchouc Company,
298 Broadway,
New York.

Gentlemen:-

In reply to yours of April 26th, I would say that the Locomobile ordered by me has not been delivered yet, but I have ordered it equipped with CONTINENTAL TIRES on all wheels, and expect to use the same if they give as good satisfaction as I expect. My reason for ordering your tires on my new car is that late last summer after having had some disagreeable experience with some American tires, I put two of your tires on my rear wheels, and used them until I stopped running the last of November, and even without your inner tubes (having some old ones in good condition I wanted to use up) I found a new pleasure in motoring in having my tires stand up.

Yours respectfully,



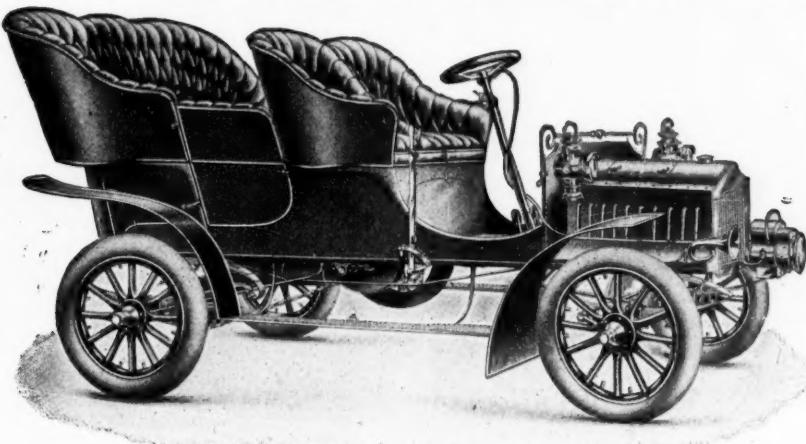
Read the last sentence over, then send for our interesting booklet and letter giving history of a 14,000 mile tire. Dept. M. A.

The Continental Caoutchouc Co.
43 Warren Street New York
Emil Grossman, General Manager
Factory: Hanover, Germany

The Powerful DOLSON

\$1350

ALL KINDS OF TALKING POINTS AND REAL MERIT



1905 MODEL C. Price, \$1350.00

Including two oil side lamps, acetylene head light, French horn, mats, full tool equipment, ready for extended touring.

COMPLETELY EQUIPPED
AND READY FOR
EXTENDED TOURING

The DOLSON is the strongest, most powerful car in America for its price. It is a hill climber par excellence, has plenty of speed, easy of control, beautifully designed, handsomely finished and upholstered. Wheel base, 90 inches. Wheels, 30 inches. Tires, 3½ inches front, 4 inches rear. Large, roomy tonneau, seating five persons comfortably.

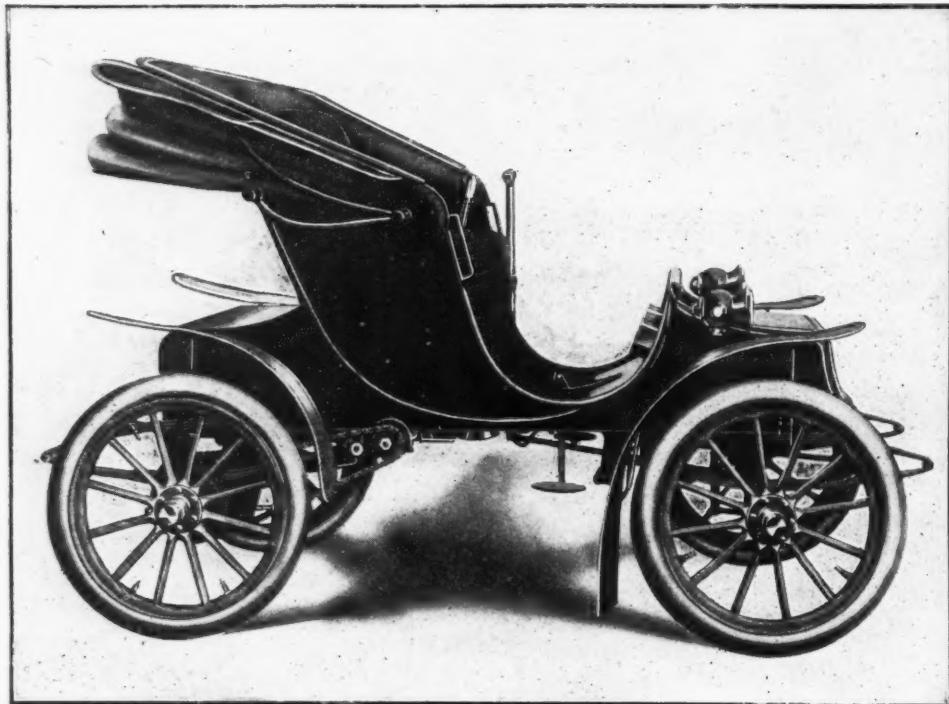
In design, material, workmanship and specifications, the DOLSON compares favorably with high-priced cars, and it is listed at a price that enables agents to sell quickly and duplicate orders. We can and will make deliveries as specified.

Don't wait too long. Get in line now.
Write for further particulars.

JOHN L. DOLSON & SONS, : : Charlotte, Michigan.

The Columbus Electric

Double Chain Drive Solid Rear Axle



75 Miles on One Charge

Weight 1,400 Pounds

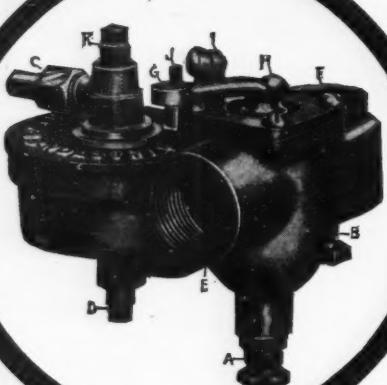
Any Speed up to 20
Miles Per Hour :: ::

NOISELESS ODORLESS
CLEAN SIMPLE

An Ideal Pleasure
Vehicle

FULL INFORMATION
SENT ON REQUEST

The Columbus Buggy Co., Columbus, Ohio



KINGSTON 1906 TYPE-K- AUTOMATIC CARBURETOR

EASY TO UNDERSTAND EASY TO OPERATE

Fuel controlled entirely by equalizing automatic air valves.

Will increase POWER and CONTROL of any 1905 FORD or OLDS car, or money back.

Positively will not accumulate fuel in, or CLOG LONG INLET PIPES.

Perfectly adapted to gasoline cars, boats, airships and motors for any kind of service.

Built for business by the oldest manufacturers in the business.

OVER 29,000 KINGSTON CARBURETORS IN USE

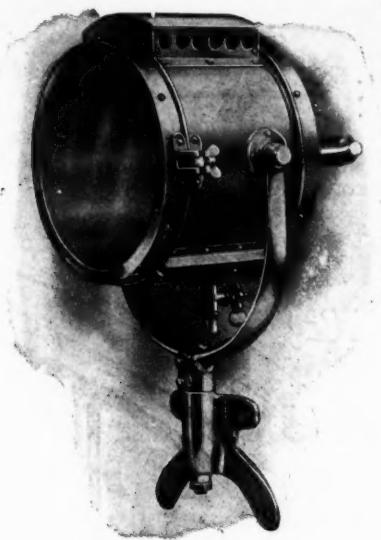
KINGSTON MUFFLER



**IMPROVED
FOR 1906**

BYRNE, KINGSTON & CO.,

KOKOMO, INDIANA, U. S. A.



SEARCHLIGHT SWINDLERS

The success of the Rushmore Lens Mirror Searchlight has been so complete that as a matter of course the lantern makers have been compelled to either try to imitate it or go out of business.

A number of them have conspired to keep us out of the automobile shows, have claimed that we do not make the celebrated Rushmore Lens Mirror and that they get their cheap flat lenses from the same place, and have resorted to every contemptible trick to deceive people into buying their trash.

Certain so-called jobbers have tried to push the sale of the imitation lights by issuing lists of what are insinuated to be our prices in comparison with their alleged cheap prices. The statement that we ask the prices quoted is a deliberate and malicious lie.

The prices they offer are but a few cents lower than ours, while the fake lights they offer are by comparison not worth their weight as junk.

Some of the fake jobbers refuse to furnish the Rushmore light when requested to do so on the plea that we cannot make delivery. That statement is likewise a deliberate lie. They offer to refund your money if not as represented, but you had better hold on to your cash.

We do not ask any money in advance, but will send the Searchlight on ten days' free trial to anyone worthy of credit. The fake jobber can make but 25 per cent to 30 per cent on the Rushmore, while he clears 100 per cent to 200 per cent on the fake lights which he obtains on consignment. Do you wonder that he is willing to cheat you?

Our prices are the lowest for the quality and we ship from stock.

Rushmore Dynamo Works, - Plainfield, N. J.

PENNSYLVANIA  CLINCHER

The value of a Tire is measured not by dollars, but by the Odometer.

The Tire which travels furthest without repairs is the most valuable to YOU.

The Tire which carries your Car softly over the road is the most valuable to your MOTOR.

PENNSYLVANIA RUBBER CO.
JEANNETTE, PA.



Another Victory

Added to the long list verifying the merits of G & J Tires.

A Stanley car, equipped with regular **G & J TIRES**, made the best American record at Mt. Washington, N. H., in the famous "Climb to the Clouds," winning in light and middleweight classes.

TIME: 22 Min. 17 3-5 Sec.

G & J TIRE CO.

INDIANAPOLIS

Boston
Chicago

Buffalo
Denver

Cleveland

Detroit
San Francisco



"U NEED ME"

TO OVERCOME YOUR
TIRE TROUBLES

See How Easy it is to Remove and
Replace Tires with these Tools.

It is a recognized fact that the genuine Clincher Tires have never been equaled for efficiency and safety. The only drawback was the one to three hours required with ordinary tools for removing and replacing tires. Of the hundred-and-one schemes devised, none have proved satisfactory but the

"U NEED ME" TOOLS SIMPLEST—SAFEST—SUREST

Simplest, because there is nothing to get out of order; Safest, because there are no sharp points or edges to cut the tire; Surest, because no matter what the size of the tire or the inexperience of the operator the same can be removed in three minutes.

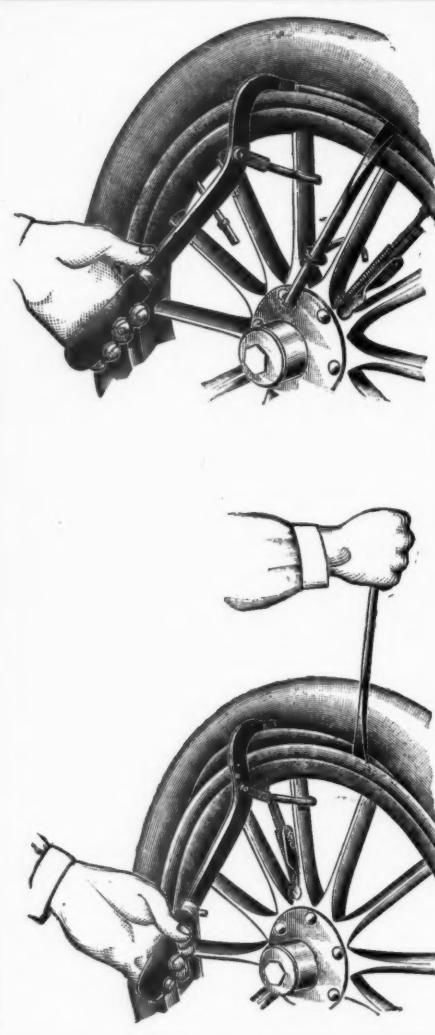
THINK OF THE SAVING IN
TIME, MONEY AND TROUBLE

It increases the life of the tire—cannot cut or tear, and eliminates the "warts" common to other processes. Once used you wouldn't be without them.

PRICES
Set of Three Tools, Black Enamel..... \$3.50
" " Nickel Plated..... 4.00
Automatic Lug Elevator, 50c extra.

*Write for Booklet.
Special Inducement to Dealers.*

"Uneedme" Tool Co.
COLUMBUS, OHIO.



Classification Distinctive...WHY?

The Lightest, the Strongest, Most Durable, Most Efficient, Best Finished. Attractive in Rich Finish and Design, Simply Manipulated.



Absolutely Safe, Perfectly Clean, Best to Ride, Most Economical to Keep. Always Satisfactory. A Carriage Any Lady Can Drive.

THE BAKER ELECTRIC

SEND FOR OUR BK CATALOG

THE BAKER MOTOR VEHICLE CO. Cleveland, Ohio

Chicago Agents: PARDEE-ULLMANN CO., 1218-20 Michigan Avenue, Chicago

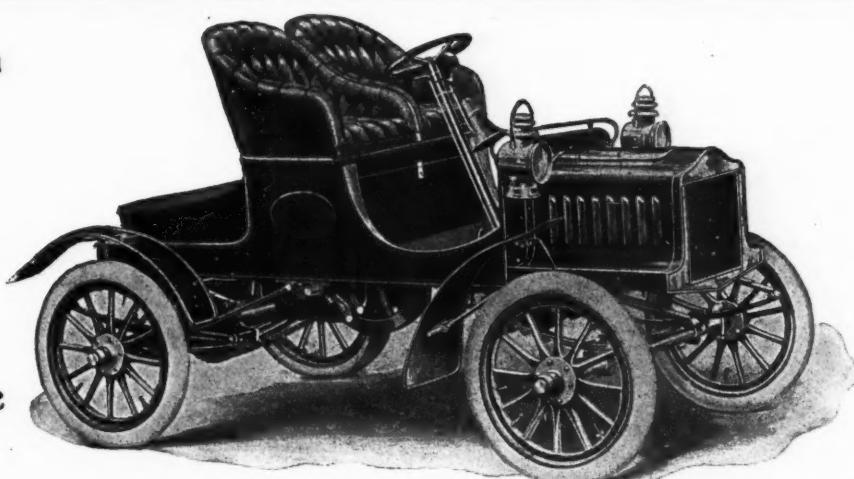
ANOTHER QUEEN

Brand new and prettier than a spotted bull pup.

This one we have listed as
MODEL F.

Its price---\$800.

Its quality... Entirely up to the Blomstrom standard.



We want every prospective buyer in the country to write us for complete description of this car. It is absolutely the best car that can possibly be made at the price. Write

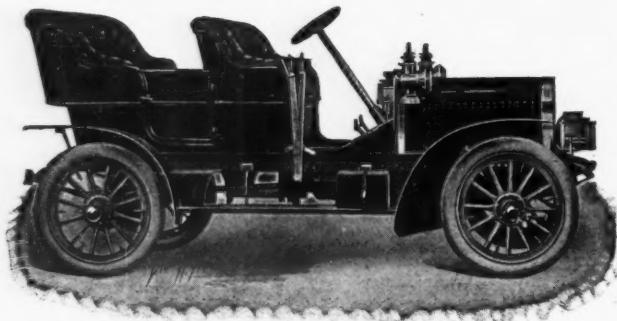
THE C. H. BLOMSTROM MOTOR CO.

1284 River St., DETROIT, MICH.

NEW YORK AGENT: C. A. Duerr & Co., Cor. 58th St. and Broadway.
PHILADELPHIA AGENT: The Motor Shop, 317-319 North Broad St.
ALLEGHENY, PA.: The Allegheny Auto Co., 711 Jackson St.

CHICAGO AGENT: Harry Branstetter, 1466 Michigan Ave.
BOSTON AGENT: F. E. Wing Motor Car Co., 66 Stanhope St.
DENVER AGENT: Mathewson Automobile Co., 1420-1422 Court Pl.

CORBIN AIR-COOLED CARS



Model D, 16-20 H. P.

MECHANICAL CONSTRUCTION UNEQUALED

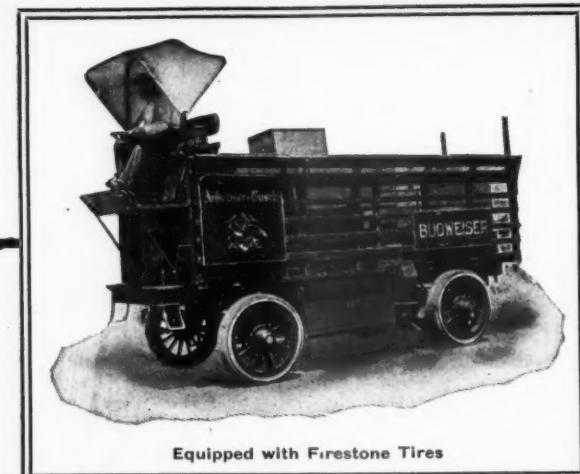
Four-cylinder motor located under hood. Crank case instantly accessible through large hand holes in side of case. Steel pan construction efficiently protecting motor, clutch, etc., from mud, dust and water. Valve cages in cylinder heads and easily removable. Double V inlet pipes. Force feed lubrication. Spark and throttle control on steering wheel. Sliding gear transmission, three forward speeds and reverse. Bevel gear propellor shaft drive. A CAR OF LUXURY. Price, complete, with full lamp and tool equipment. Immediate delivery.

\$2000

**Corbin Motor
Vehicle Corp'n**

NEW BRITAIN, CONN.

New York Agent, 4 W. 38th St. Boston Agent, 163 Columbus Ave.



Equipped with Firestone Tires

A Tire Paying Daily Dividends

When you invest your money in a tire the voice of wisdom cries out to put it in the best investment.

The "Firestone" is unquestionably the safest tire investment—it outlasts any tire made and gives solid satisfaction every hour of its existence on all kinds of vehicles, from the lightest buggy to the heaviest Automobile Truck.

It yields daily dividends of real pleasure, as it is free from every annoyance, and never wears out until you've had full value for the money expended.

Then why not

"Firestone"

FIRESTONE TIRE & RUBBER CO.

Akron, Ohio

New York Chicago Philadelphia Boston St. Louis
San Francisco Los Angeles



Equipped with Firestone Tires

OF eighteen cars which had no tire troubles in the Glidden Tour, ten were equipped with

Diamond Wrapped Tread Tires

A total of four punctures and one fabric break due to excessive wear was the whole trouble given by Diamond Tires.

Their entire record was conspicuously the best of any of six makes represented in the tour, and thirteen of thirty-one cars actually participating were equipped with them.

Does **durability** mean anything to you?

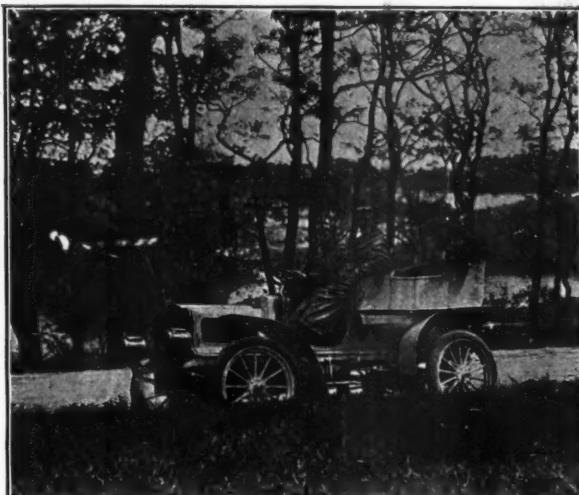
THE DIAMOND RUBBER CO.
AKRON, OHIO

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DETROIT.....	310 Woodward Avenue
ST. LOUIS.....	3968 Olive Street
SAN FRANCISCO.....	608 Mission Street
MINNEAPOLIS.....	611 First Avenue, S.
DENVER.....	1735 Arapahoe Street
CLEVELAND.....	323 Huron Street
ATLANTA.....	94 North Pryor Street

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



In the recent A. A. A. tour for the Glidden trophy, the White squadron of course came through smoothly, swiftly and consistently, just as they have in every other tour ever conducted in this country.

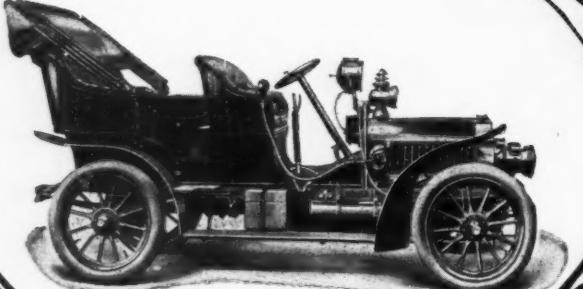
As indicating the relative confidence which private owners have in their machine, we would call attention to the fact that five Whites driven by private owners participated in the tour, as compared with but one of any other single make. At least two of these private owners had perfect scores.

Furthermore, a White was first at the important night stops, Boston and Bretton Woods, and also at Yonkers, the official terminus of the tour.

WHITE Sewing
Machine **COMPANY**

Cleveland, Ohio

Cleveland
THE CAR OF SIMPLICITY



THE VERY BEST
way to determine the merits of an automobile is by asking the opinion of the man who owns one.

¶ Our confidence in the **CLEVELAND CAR** has prompted us to make the unprecedented offer of furnishing the names and addresses of owners of **CLEVELAND CARS** in various parts of the country, to any and all who contemplate purchasing an automobile, and would like to know something about the **CLEVELAND**.

¶ The record of the **CLEVELAND** this season has confirmed our confidence, and we shall have pleasure in complying with all requests for references.

BRING AN EXPERT WITH YOU
when the demonstration is made. He will **very** readily determine whether or not the **CLEVELAND** Is All Right.

¶ Immediate delivery. 18-20 H.P., \$2800.

¶ Our new catalogue gives full particulars.

CLEVELAND MOTOR CAR CO.
384 Erie Street : : : : : CLEVELAND, O.

National Motor Cars

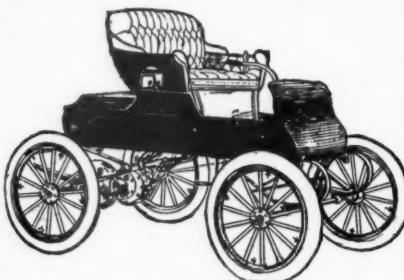
"WATCH FOR THE ROUND RADIATOR"



National
Model C.
24-30 H.P.
4 cyl., 4¹₂ x 5

A touring car decidedly in advance of the times.
A type of car that will be extensively copied in the near future.
Ample power and speed, perfect control.
All working parts simply arranged and *remarkably* accessible

National
Electric
Runabout



One of several handy little electric cars which are unsurpassed for convenience and comfort. Write for our catalogues.

NATIONAL MOTOR VEHICLE CO.

Members American Motor Car Manufacturers' Association, Chicago.

1006 East Twenty-second Street, INDIANAPOLIS, IND.

CHAIN DRIVE WINS

In Gordon-Bennett Race



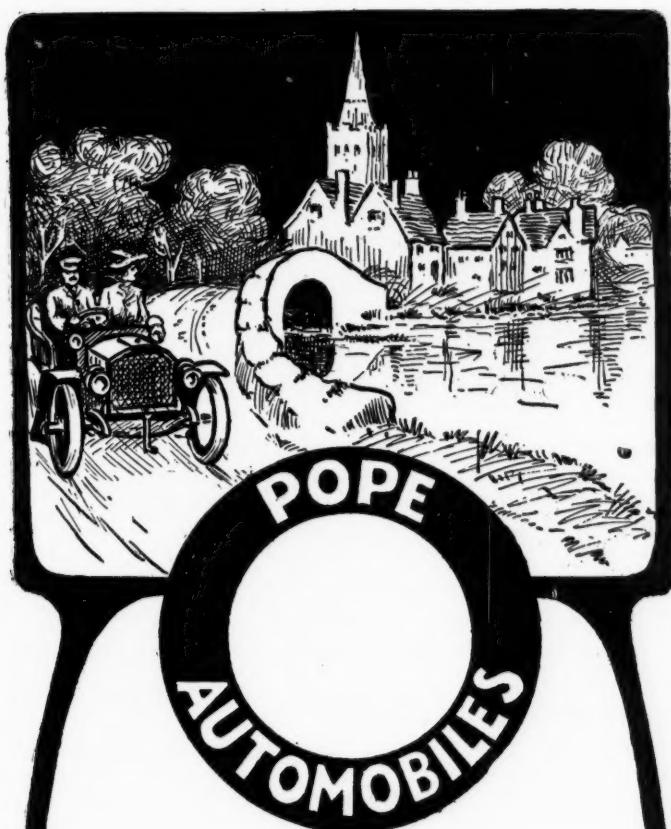
A chain driven car won the Gordon-Bennett cup race. Indeed, with one exception, all the cars starting in that classic event were chain driven. Four of the entries were fitted with DIAMOND chains.

TRADE  MARK.

"Diamonds" are used as regular equipment on the following cars:

Studebaker	Dolson	Lane
Locomobile	Premier	Black Diamond
Pope-Toledo	Michigan	Stevens-Duryea
Thomas	Reo	Burt Mfg. Co.
Smith & Mabley	Mahoning	Caps Bros.
Austin	Sacht Mfg. Co.	Veracity
Haynes-Apperson	Western Tool Works	Carlston
Apperson	General	New-Way
Yale	Reliance	Union
Beverly	Buick	Fredonia
Bates	Jackson	Acme
Logan	Glide	Standard
Marion	Woods	Whiting
	Tincher	

Diamond Chain & Mfg. Co.,
Indianapolis



POPE
AUTOMOBILES

**The
Remarkable Performances**

OF THE

45 h.p. Pope-Toledo, driven by Albert L. Pope
18 h.p. Pope-Harford, driven by Chas. E. Walker
12 h.p. Pope-Tribune, driven by Harold L. Pope

**in the Glidden Tour to the White
Mountains have attracted universal
attention.**

Chas. Soules in a stock 30 h.p. Pope-Toledo broke the record by climbing Mt. Washington in 29:37 3-5.

Paul L. Roche, in J. M. Morrison's 45 h.p. Pope-Toledo with full touring equipment, took five passengers up the mountain in 46 minutes.

Be Sure the Name "**POPE**" is On Your Automobile

POPE MFG. CO.
HARTFORD, CONN.

POPE MOTOR CAR CO.
TOLEDO, OHIO

M. A. L. A. M.



Everyone Who Knows

automobiles, knows that the Peerless is an acknowledged leader among high-grade cars. If you are thinking of buying a large car you cannot afford to miss looking into the unique mechanical features of the Peerless.

If we cannot convince you that the Peerless Car is the best adapted to American touring conditions of any car built in this country or abroad, we don't want your money.

Catalogue sent on request tells something, but demonstration by our agents tells more.

The Peerless Motor Car Co.

Lisbon Street, Cleveland, Ohio

Member A. L. A. M.

Straight Talk to Automobile Agents

Nearly seven years' experimental work was spent on the first WAYNE car before the public were even asked to look at it. In 1903 we built a limited number of cars which were placed in various parts of the country and given daily use under every possible condition with most gratifying results.

In the summer of 1904 we commenced making deliveries to agencies and inaugurated an effective general advertising campaign to help our Agents.

The Wayne Automobile Co. offers its agents the most liberal treatment and the heartiest co-operation, not only by assisting in sales, but by prompt attention in supplying parts and accessories. During 1905 we spent \$50,000 in advertising the merits of the Wayne Cars. For next season we are planning a most aggressive selling campaign. Our 1906 models embody the most advanced principles of Automobile construction and no expense is being spared in order to make the Wayne Cars perfect in every detail.

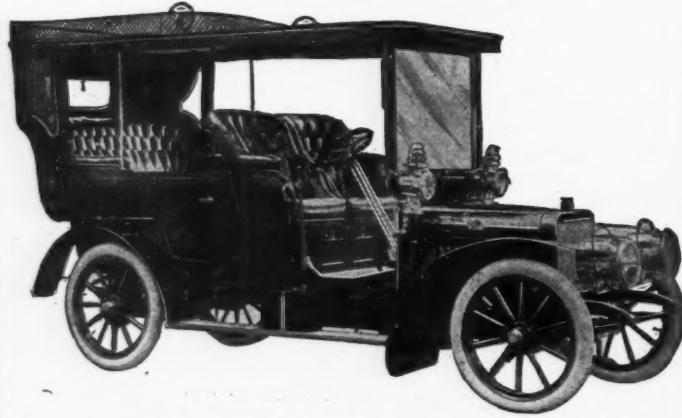
The Wayne Company believes in RECIPROCITY. We want to be on the most cordial terms with our agents and we want the agent to make money. That's the only way that both of us can succeed.

Better get in touch with us for 1906. It is not too early to write today.

Wayne Automobile Co., ... Detroit, Mich.

THE DARRACQ

Represents the Most Advanced
Features in Foreign Improvement



Equipped with the Latest Magneto and Jump Spark
Ignition :: Perfect Automatic Throttle
Control :: Positively Noiseless

LET US PROVE THIS TO YOU

ALL PARTS KEPT IN STOCK

THE F. A. LA ROCHE CO.

Licensed Importers under Selden Patent 549,160.

652 to 664 Hudson Street, :: :: NEW YORK
Up Town Store, 147 W. 38th Street, NEW YORK

\$1400 **Compound** \$1400
12-15 H. P. 12-15 H. P.

Model Four



Simple and Reliable

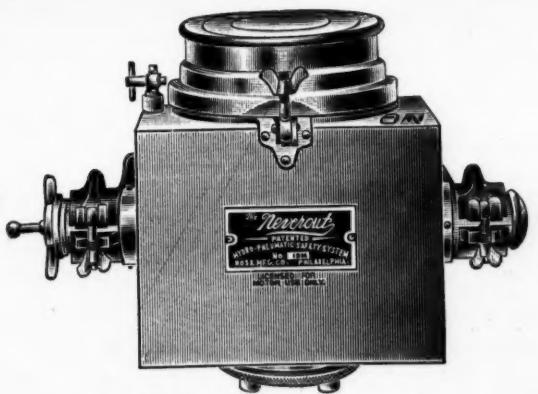
Strong and Durable

A powerful light Touring Car of the most up-to-date construction that runs easily with no vibration, and has that quality of workmanship found only in cars of the highest grade.

Some good territory still open

THE E. H. V. CO.

MIDDLETOWN
CONNECTICUT



The Neverout

TRADE MARK

Patent Safety Gas Producer

is one of the greatest inventions ever known to the motoring world. There is nothing else like it to furnish gas for lighting purposes on motor cars and boats.

Makes gas only as needed and is instantly lighted. The flame is at once intensely white and penetrating.

Extinguished immediately without after-generation or odor or waste. Saves its price many times over by its economical use of the carbide.

As big a success as

The Neverout

TRADE MARK

Mirror Lens Searchlight

—the strongest, handsomest and most powerful in the world.

Write for free illustrated catalogue.

ROSE MFG. CO.,

912 Arch Street

Philadelphia

The Care of the Car

Washing the body of the machine, keeping the polished surface free from lubricator, road dust and gutter muck is just as essential to the life of an Automobile, as is the attention given the running gear.

Mobo, the new cleanser for Automobiles, will easily and quickly remove grease, dirt and grime and all traces of a hard run, without dulling or scratching the highly polished surface.

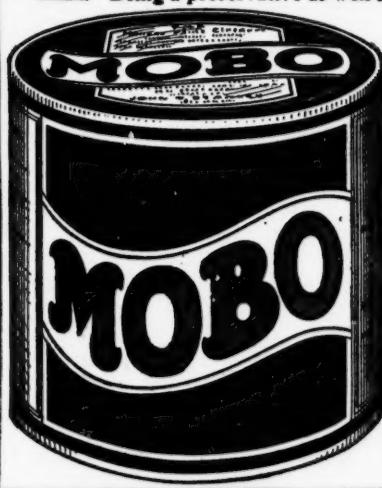
MOBO

is unlike common soap, as it positively contains no free alkali. Being a preservative as well as a cleanser, it prevents varnish or paint from peeling or cracking, and adds a fine gloss to the surface.

Mobo may be used with profit on leather goods, harness or woolen fabrics. Cannot harm the most sensitive skin, as it is a purely vegetable oil preparation and absolutely contains no free alkali. Put up in 2-lb. and 8-lb. cans; also in tubs, half barrels and barrels.

If your supply man does not keep *Mobo*, send us his name and address, and we will see your wants are supplied.

JOHN T. STANLEY
New York.



STANDARD PARTS FOR

POWER TRUCKS AND WAGONS

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

PARTS WE SUPPLY

STEERING GEAR, Complete

COUNTERSHAFT and REDUCTION GEARS

FRONT AXLES, Complete

SPROCKETS

COUNTERSHAFT BRAKES

HUB BRAKES

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SEND FOR CATALOGS Nos. 2, 3 and 5

TOURING CAR PARTS, CATALOGS Nos. 6, 7, 9, 12 and 13

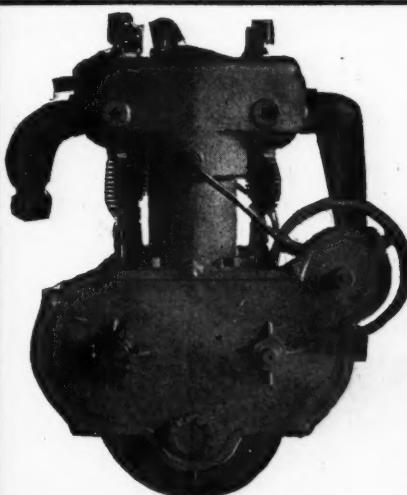
The Garford Company

ELYRIA
OHIO

Selling Agent, HAYDEN EAMES

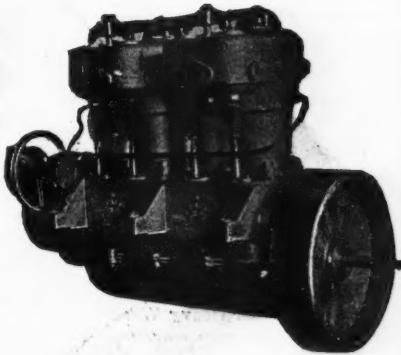
American Trust Building - CLEVELAND

BUY
KAESTNER
PRODUCT



MOTORS

FOR
Automobiles
Boats
and
Mining
Machinery
Transmissions
Etc.



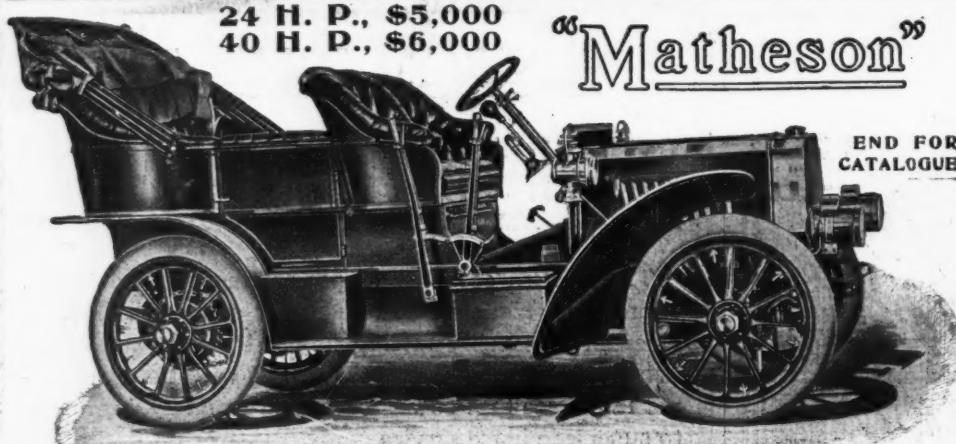
CHAS. KAESTNER MFG. CO.

SOUTH BEND, INDIANA

24 H. P., \$5,000
40 H. P., \$6,000

Matheson

END FOR
CATALOGUE



"AMERICA'S FINEST MOTOR CAR"

CHARACTERISTIC FEATURES:

Self-starting from the seat.
Practically noiseless.
Absence of vibration.
Four-cylinder vertical engine.
Valves, in the head.
Automatic carburetor, never requires adjustment.
Automatic speed control, by governor.
Automatic lubrication.
Single lever control.
"Make-and-Break" ignition.
Irreversible steering gear.
Four powerful brakes.
Timken roller bearings.
Armored frame.
Road clearance of 12 inches.
Side entrance.
Aluminum body.
Wheel base 106 inches.
Imported "Continental" tires.
Improved Honeycomb radiator.
Long life—insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. gear.

MATHESON MOTOR CAR CO., Holyoke, Mass.

New York Agents, SHEPARD BROS., 500 Fifth Ave.

THE MOLINE



12 Horse Power

Model "D" \$1000

Double Cylinder Opposed Motor. [4½ in. x 4½ in.]
86-inch wheel base. 30-inch wheels. 3½-inch tires, rear;
3-inch front. Detachable tonneau with wide side entrance.

Model "B"—4 Cylinder, 18-20 H. P. Touring Car, \$1600.

MOLINE AUTOMOBILE COMPANY

Members American Motor Car Manufacturers' Association, Chicago.

EAST MOLINE, ILLINOIS

MEAD MOTOR CO., Chicago Agents



Motorists want

to know the speed they are going, the distance traveled and the time of day. The

Lea "Speedistimeter"

tells speed, distance and time of day

at a glance and is always before them. Figures are plainly seen from the seat.

Covered with bevel plate glass and enclosed in waterproof brass case.

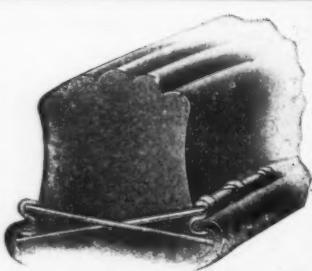
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William S. Jones

Sole Selling Agent for Motor Car Specialty Co., Trenton, N. J.

112 North Broad Street

Philadelphia



Tire Fastener for Heavy Work

Save Time, Money and Trouble, and
Get MOST Work out of

Motz Clincher Tires

Solid rubber or cushion types and made to fit any standard clincher rim in which pneumatic tires are used.

Resilient and "there with the wear"

The Motz Clincher Tire & Rubber Co.
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OBSERVE
THE FASTENING
DEVICE



Tire Fastener for Ordinary Work

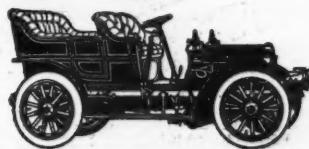
Locomobile



The Locomobile Company of America, Bridgeport, Conn.
Member Association Licensed Automobile Manufacturers.

NEW YORK, Broadway and 76th St.
PHILADELPHIA, 249 N. Broad St.

BOSTON, 15 Berkeley St.
CHICAGO, 1354 Michigan Ave.



The absolute best in Motor Lamps

THIS SOLAR PARABOLENS HEADLIGHT

throws most powerful beam of any lamp made, yet burns cool. Simple, safe and sure, no better lamp can be built. The most your dealer will say about the next best is that it is "just as good as a SOLAR"—but why not buy the standard and dodge the second best?

We stand back of every SOLAR lamp with a guarantee to you—a warranty that leaves no room for risk on the buyer's part. You can't buy better lamps—whether oil or acetylene.

Write for booklet—or ask your supply man.

BADGER BRASS MFG. CO.
KENOSHA, WIS.
New York Office. 11 Warren St.

GAS-AU-LEC

A 40-45 H. P., 4-cylinder, 4-cycle engine, five passenger, side entrance, Gasolene Touring Car of the Highest Grade.

WITHOUT Starting Crank Cams Valve Gearing
Change Speed Gears Rocket Shafts or
Clutch Clutch Tappets Complications

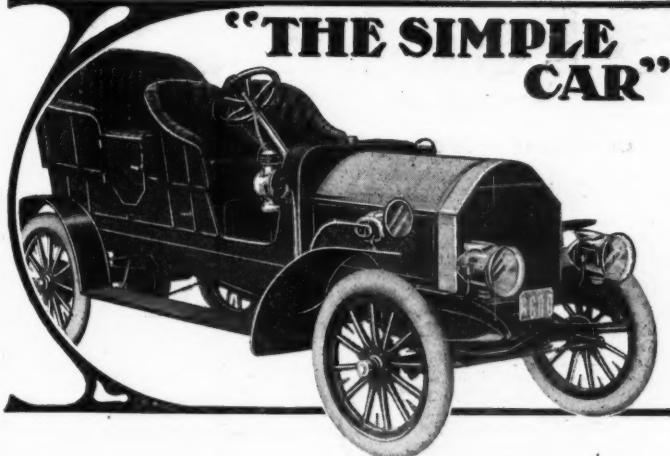
Every movement of the motive power and the car, from a state of absolute rest, forward at any speed or reverse, is controlled by one lever, operated either by hand or foot, as preferred. Positively no other speed or movement controlling device of any kind on the car. Triple brakes—irreversible steering gear.

THE GAS-AU-LEC IS THE SIMPLEST GASOLENE CAR IN THE WORLD

both as to construction and control, and the easiest to operate and maintain. Elegant Finish, Luxurious in Appointments, Built by Skilled Workmen from the Best Materials Obtainable.

CORWIN MFG. COMPANY Formerly Vaughn Machine Co. PEABODY, MASS., U. S. A.

"Marks a New Era in Automobile Construction"



Columbia

Electric Victoria-Phaeton

MARK LXI

We can now make immediate delivery of this beautiful carriage—the lightest, fastest, widest of radius, and most luxuriously furnished of any electric in its class. Divided Exide Battery. Enclosed Chain Drive.

Catalogue of Columbia Electric Carriages will be sent on request. Also separate Catalogue of Columbia 18 h. p. and 35-40 h. p. Gasolene Cars and Electric Commercial Vehicles

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New York Branch: 184, 186, 188 West 39th St.
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Boston: Columbia Motor Vehicle Co., 74, 76, 78 Stanhope St.

Washington: Washington E. V. Transportation Co., 15th St. and Ohio Ave.
Philadelphia: Pennsylvania Electric Vehicle Co., 250 North Broad St.
Member Association Licensed Automobile Manufacturers.



Price, \$1,350. "De Luxe" Throughout

Have you seen the new **KOKOMO** Mechanically-Attached
AUTOMOBILE TIRE?

*It is just what you
Have been looking for*

Quickly attached and detached.
Creeping and Rim Cutting entirely avoided.
Made of the very best material and workmanship
throughout.
Write us for full particulars.

Kokomo Rubber Co., Kokomo, Ind.

Standard Roller Bearing Company

STEEL
BRASS
BRONZE **BALLS**

Use Our "A" Grade Steel Balls for ordinary bearings
"B" Grade for bicycles, etc.
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USE THE BEST BALL MADE

"High Duty"
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For High Speed and Heavy Service

Our Capacity is 500,000,000 Balls per Annum

First Prize for Accuracy, Strength and Durability, at
Paris and Pan-American Expositions

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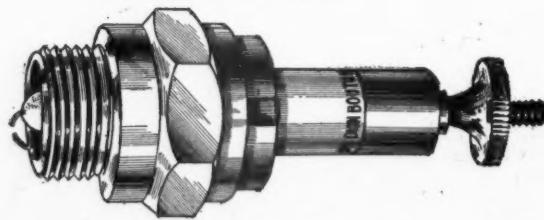
PHILADELPHIA, PA.

Largest Ball Makers in the World. Also Manufacturers of Ball
Bearings, Automobile Bearings, etc.

Send for complete Catalogue and Ball Price List

FIRST IN THE COUNTRY
First in the Hearts of the Automobilists

The one standard automobile
plug of the world. The one
that has been used for years
and is still considered the best
plug on the market, regardless
of the great number that are
now being manufactured in this
country and Europe.



The 1906 Genuine DeDion Spark Plug

The above illustration shows the 1906 Genuine DeDion Plug. We have just received the first of these plugs that have been imported to this country.

Price, \$1.50 each, mailed to any address.

Charles E. Miller

Manufacturer, Jobber,
Exporter and Importer

Home Office
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Branches
Broadway and 38th St., New York 318-320 N. Broad St., Philadelphia
202-204 Columbus Ave., Boston, Mass. 406 Erie Street, Cleveland, Ohio

REGARDING 1906 BUSINESS

As truthful a saying as ever was heard
Refers to a worm and an early bird;
And especially true is this of the sage,
Who uses space now in the MOTOR AGE.



The Everlasting Question

in every motorist's mind is the one regarding "speed"—"how far and how fast" am I going." Without accurate means of registering speed no man can well approximate the rate at which he is traveling in an automobile.

THE AUTO-METER

answers the questions and does it so precisely that whether the speed is one mile or one hundred miles per hour, the rate is plainly and steadily shown upon the indicator.

Because of the proven positiveness of its principle of operation, it **CAN'T GO WRONG.**

Send for proof from thousands of users whose praise of the Warner Auto-Meter must convince you of its sterling value. The "Auto-Meter" was used continuously day and night by Guy Vaughan, at Morris Park, and C. G. Wrigley, at Brighton Beach, in their record-breaking 1000-mile races against time, and highly praised by both of them for its efficiency. You ought to know "How Fast and How Far" you go.

Write for full information.

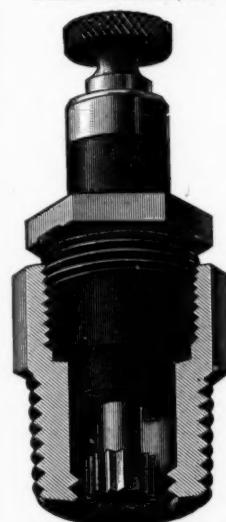
WARNER INSTRUMENT CO., 52 Roosevelt Avenue, Beloit, Wis.
39 Cortlandt St., New York 143 Federal St., Boston



The "Auto-Meter"
Showing Warner
Speedometer and
Odometer, with
Season and
Trip Dials

ALBRIGHT ◆ SPARK PLUG ◆ ALBRIGHT

Patented March 14, 1905



Manufacturers, Dealers and Owners
of Gasoline Engines. **READ THIS**

Letter from proprietor of the
largest furniture house and
mattress factory in the South:

Columbus, Ga., July 17, 1905.
Camp Cycle Co., Columbus, Ga.
Gentlemen: I am using an 8 H.P. air-cooled
gasoline engine for power in my Mattress factory. We had used many different kinds of spark
plugs before we got one of yours, and all of
them gave us trouble frequently; but since your
"ALBRIGHT" plug was put in my engine I
haven't had one minute's trouble, and have never
removed it for any purpose whatever. You
have the best plug I have seen yet. Trusting
this will be of some use to you, I remain,

Yours truly,
(Signed) J. L. B. JOHNSON,

WE WANT YOUR BUSINESS. WRITE
TODAY FOR SPECIAL PROPOSITION.

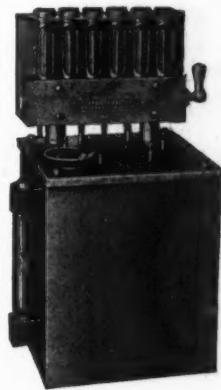
"ALBRIGHT"
IT CANNOT BE FOULED

CAMP CYCLE CO.
Manufacturers and Distributors
COLUMBUS, GA.

THE HILL PRECISION OILER

INSURES PERFECT LUBRICATION

Your Money Back if it
Does Not do the Work

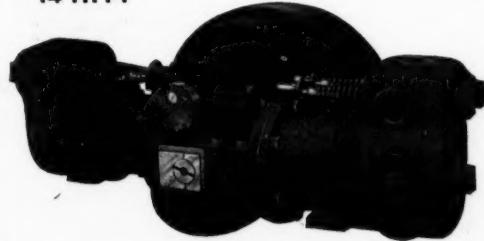


It measures the oil, and uniformly forces exact quantities to each bearing it serves, regardless of the resistance, or of the varying resistance, in the different tubes. It feeds only when the machinery is in motion.

THE STEEL BALL COMPANY
832 Austin Avenue
CHICAGO, U. S. A.

BEAVER MOTORS

14 H. P.



Horizontal Opposed Cylinder Engine, 4 3/4 x 4.

HAVE PROVEN THEIR
VALUE in ACTUAL SERVICE
BECAUSE THEY ARE
SKILFULLY MADE AND
MECHANICALLY CORRECT

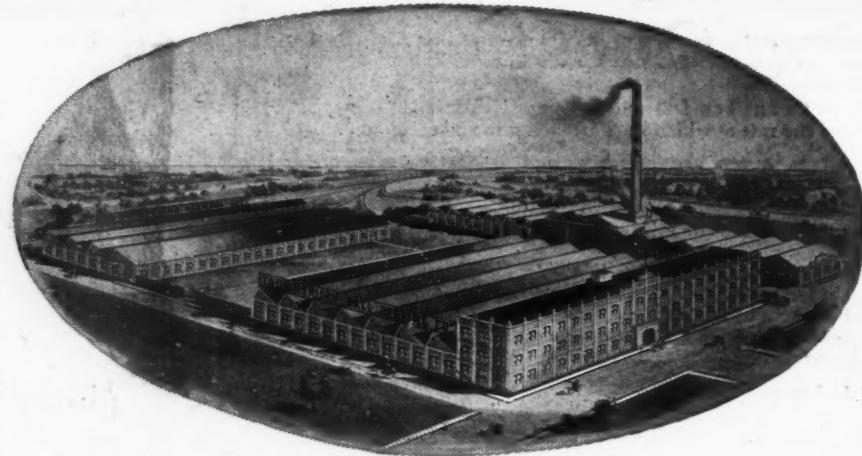
If you are interested in Efficiency,
Durability and Neatness of Design,
write us.

BEAVER MFG. CO.
MILWAUKEE, WIS.

16-18 H. P.



Horizontal Opposed Cylinder Engine, 5 x 4 1/2.



The output of **COMPLETE FRONT and REAR AUTOMOBILE AXLES** of this plant exceeds the capacity of all competition combined.

THE AMERICAN BALL BEARING CO.
L. S. & M. S. Railway and Edgewater Park
CLEVELAND, OHIO, U. S. A.

THE LIMIT

OF UNFAILING CARBURETER EFFICIENCY

Here's Proof

From the
Four Wheel Drive Wagon Co.
of Milwaukee
Commercial Motor Vehicle
Builders

After expending about \$150 for various makes of carbureters and finding them all defective because of lack of range in throttling the engine, we were much pleased upon installing your Acorn carbureter.

We find this carbureter feeding the engine evenly and properly from the lowest to the highest speeds and WE DO NOT HESITATE TO RECOMMEND IT AS THE BEST CARBURETER WE HAVE TRIED.

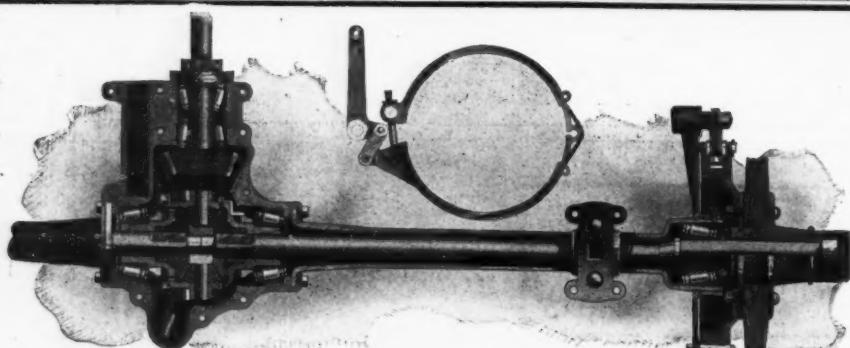
IT FED OUR ENGINE PROPERLY IN ALL OUR RECENT TESTS, HAULING AS HIGH AS 27,000 LBS. GROSS WEIGHT ON OUR TRUCK, NEVER MISSING EXPLOSION A SINGLE TIME. * * * ETC.
FOUR WHEEL DRIVE WAGON CO.,
H. Theo Hansen, V. Pres. and Mgr.

It's not what we claim, so much as what actual users say of

ACORN CARBURETERS

that proves their Sterling Reliability. A trial will convince anybody. Write

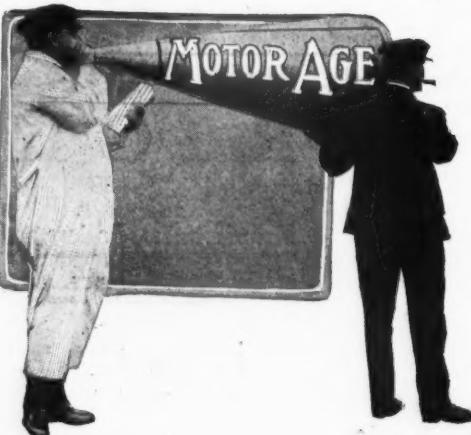
BLACK & KRUEGER
Milwaukee Wisconsin



THE MOST PROMINENT AUTO BUILDERS USE OUR AXLES

TIMKEN ROLLER BEARING AXLE CO.

CANTON, OHIO



The Official Announcer

of news pertaining to touring, racing, the commercial era and the industry in general. It will cost you \$2 for 52 issues. It's worth it.

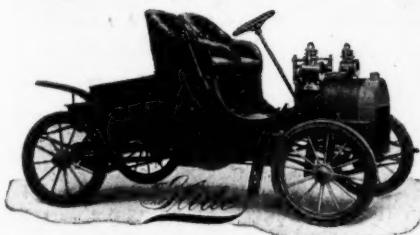
MOTOR AGE, 309 Michigan Avenue, Chicago

**Bevel Gear Drive Axles
Divided Rear Live Axles
Steering Knuckles
Artillery Wheels
Channel Rims**

Awarded Gold Medal, World's Fair

Write for Catalogue and Prices

GLIDE



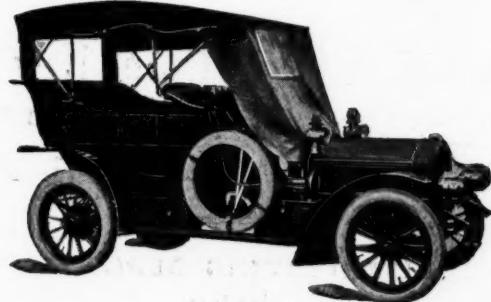
Glide Glideabout \$800

cars are good cars, and possess many distinctive features of merit. Do not buy until you investigate our line.

Catalogue on request.

THE BARTHOLOMEW CO. 415 Bradley St. PEORIA, ILL.
Members American Motor Car Manufacturers' Association, Chicago.

CATALOGUE ON REQUEST



APPERSON BROS. KOKOMO INDIANA

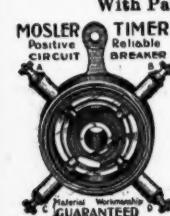
USE MOSLER 1905 "SPIT-FIRE" PLUGS

They ACTUALLY "SPIT-FIRE"
while others spark only

BASE { Facilitates Sparking. Makes Plugs Spit-Fire.
Acts as Condenser of Electricity.
Protects Insulation and Sparking Points.

STANDARD SIZE, \$1.50, Postpaid. SPECIAL, \$2.00
With Patented Protector, \$.50 additional.

Used by the Leading Manufacturers.
INSIST upon Name and Patent Dates.
BEWARE of Valueless Imitations.



A. R. MOSLER 1679 Broadway NEW YORK

A New Era in Carbureters



THE GARILLUS AUTOMATIC CARBURETER is a perfectly automatic carbureter, without a float, without compensator, easy to start, sure to run. So simple it cannot get out of order. Greatest economy. Highest efficiency. An easy starter on four cylinder engines. Money refunded if not satisfactory.

The Goddard Machine Co., Holyoke, Mass., says: "The GARILLUS CARBURETER gives a 10 per cent higher efficiency than any carbureter we have tried, producing in a test two h. p. more than the and one h. p. more than the We believe in it thoroughly." (These were two prominent float feed carbureters.)

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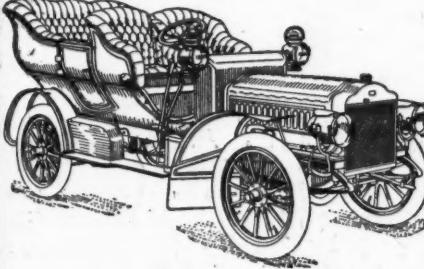
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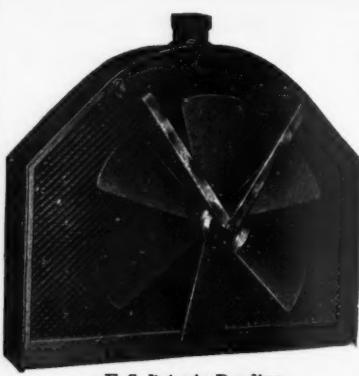
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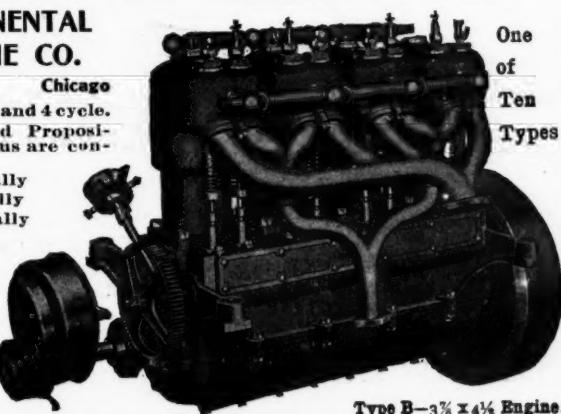
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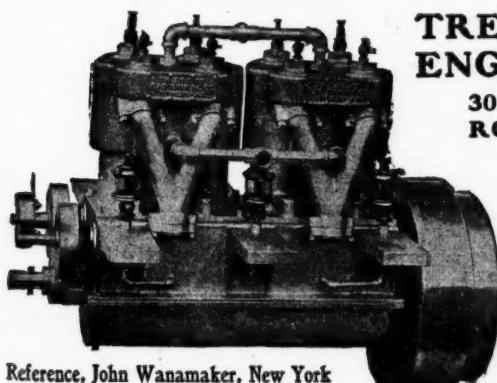
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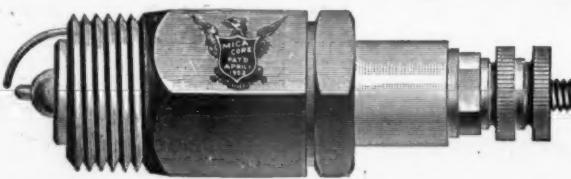
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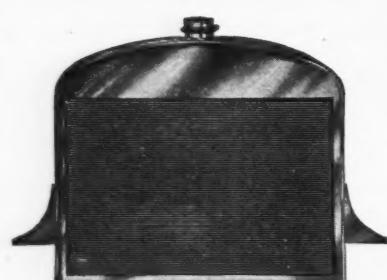
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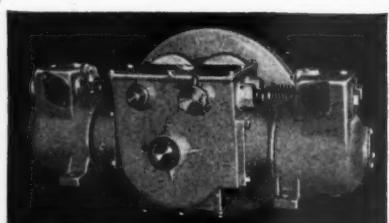
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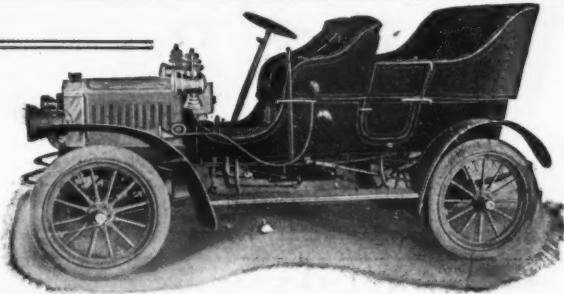
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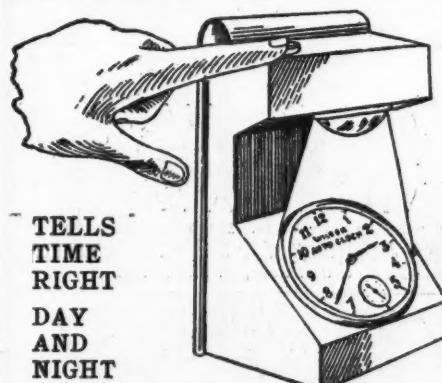
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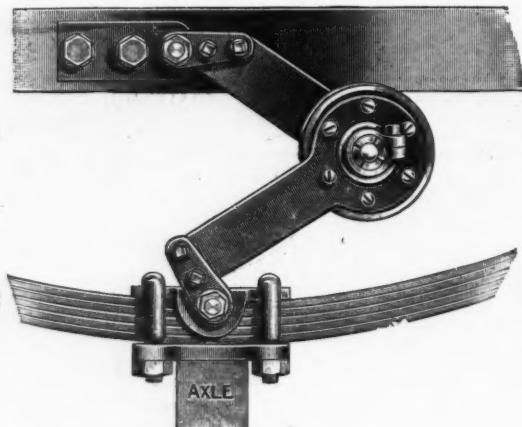
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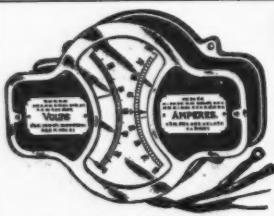
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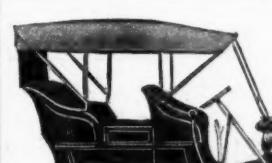
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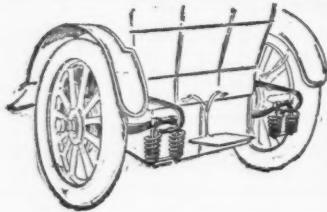
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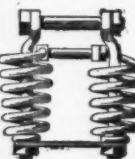
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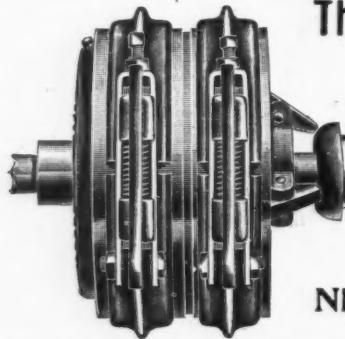
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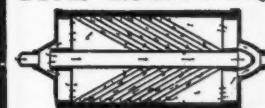
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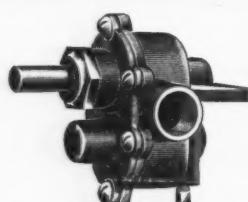
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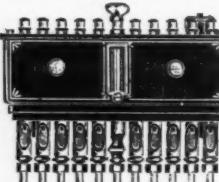
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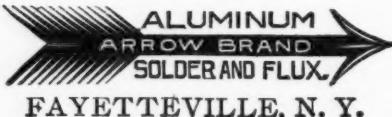
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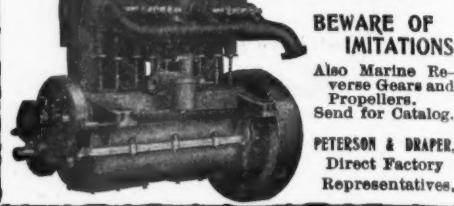
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One 1903 Olds runabout, overhauled, with improvements, revarnished, with leather top, \$375.

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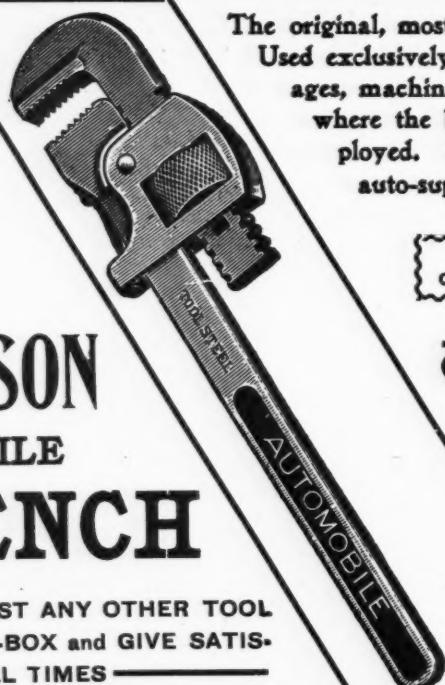
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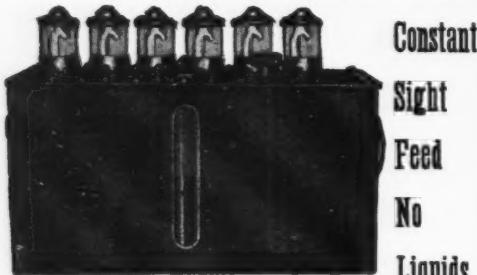
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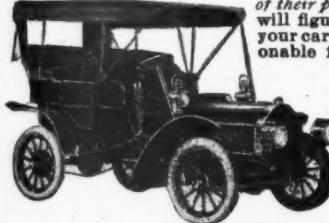
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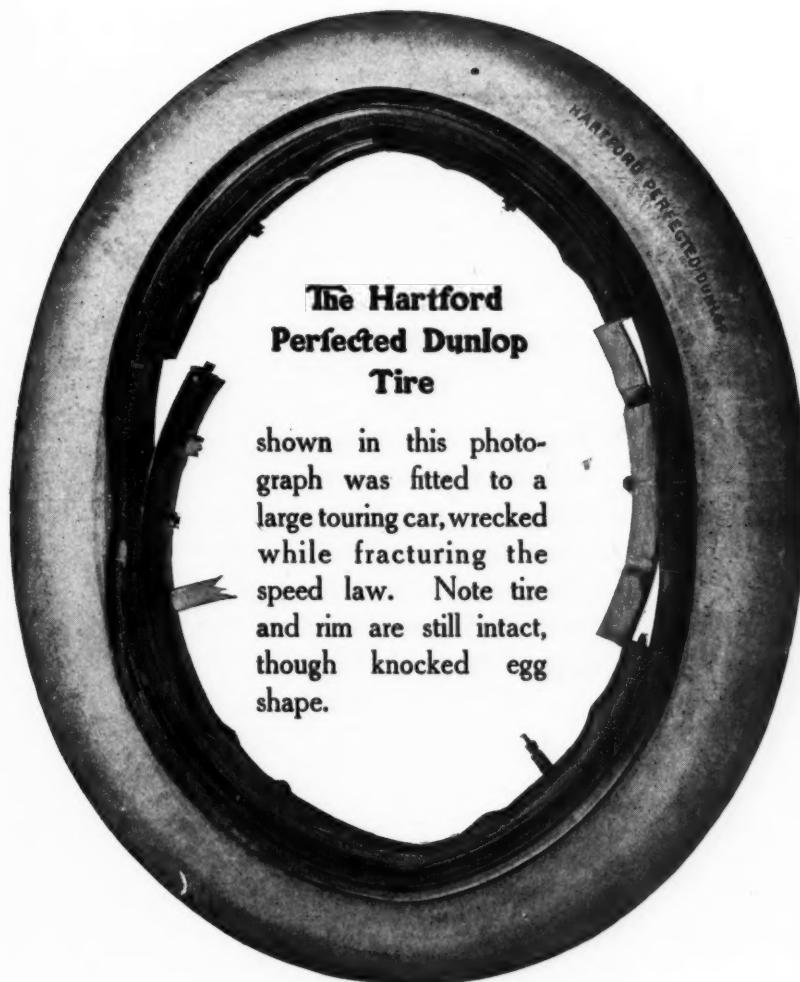
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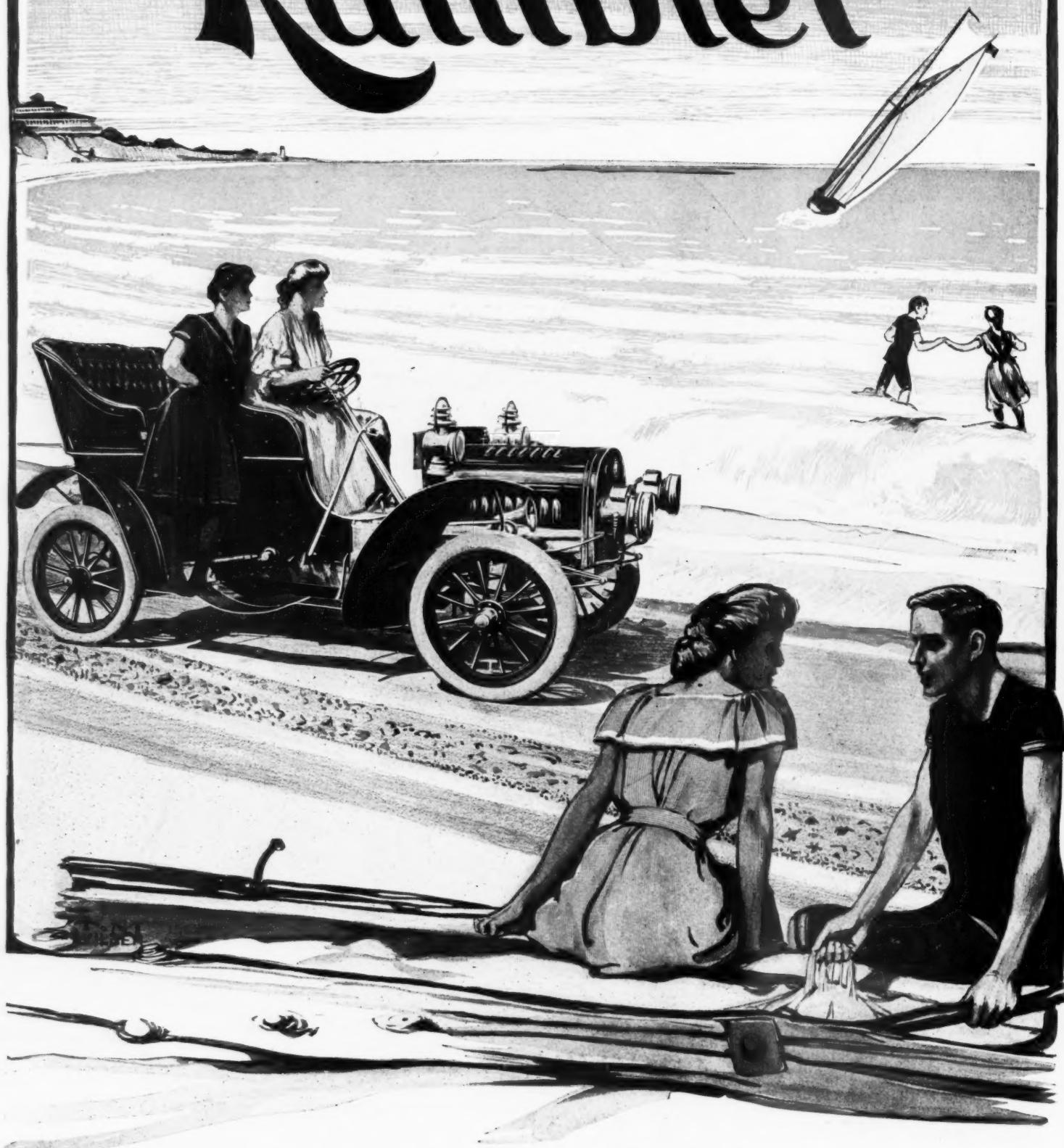
shown in this photograph was fitted to a large touring car, wrecked while fracturing the speed law. Note tire and rim are still intact, though knocked egg shape.

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